PHILIPS VKR6850

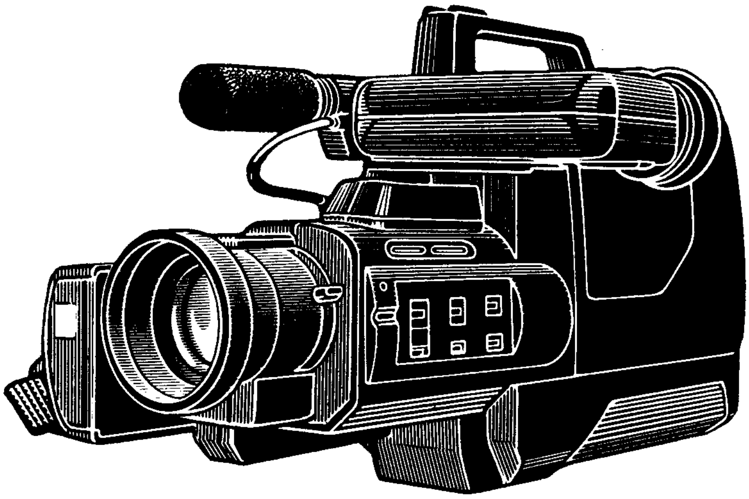
MODEL

SERVICE MANUAL

INTRODUCTION

This service manual contains technical information which will allow service technicians to understand and service this model.
Section 1 presents you with some general information of features and controls, enabling you to become familiar with each function.
Section 2 contributes to your mechanical and electrical adjustment as well disassembly and replacement procedures.
In the case of very common information relating to other models like mechanical adjustments, please refer to each service manual.
Section 3 contains block diagrams which offers you information for checking and understanding each circuit. Schematic diagrams which give you detailed information such as waveforms, voltage data, function e.t.c...
Section 4 contains exploded views and parts list.
Please place orders using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

VHS Movie



SPECIFICATIONS

ITEM	SPECIFICATION
POWER	Source: BATTERY; DC 12V Consumption; Recording mode; 7.3W (Battery operation) Stand-by mode; 1.0W (Battery operation)
RECORDING SYSTEM	4 rotary heads, helical scanning system PAL
TAPE FORMAT	VHS Cassette Tape (Tape width 12.7mm)
TAPE SPEED	23.39mm/s Record/Playback Time 3 hours with 180min. type tape FF/REW Time less than 12min. with 180min. type tape
CAMERA	PICK-UP ELEMENT: CCD (Charge Coupled Device)
	STANDARD ILLUMINATION: 1,400 lux
	MINIMUM REQUIRED ILLUMINATION: 10 lux
	LENS: Built-in 6:1 Power Zoom Lens with MACRO Function, Auto Iris, Auto Focus System, F1.2 (9~54mm), Filter Diameter/ϕ49mm
	VIEW FINDER: 2/3" B/W Electric View Finder
	WHITE BALANCE: Auto White Balance/ Indoor/Outdoor
VIDEO	HEADS: 4 rotary heads 1 flying (rotary) erase head
	INPUT (except E/B/EG): Adaptor (Multi); Y signal, $1.75^{+0.5}_{-0.2}$Vp-p 1.5kΩ DC1.95±0.2V C Burst signal, 500±75mVp-p (RED/BURST, 1.75±0.3Vp-p) 22kΩ DC1.75±0.2V OUTPUT: Adaptor (Multi); 1.0±0.15Vp-p 75Ω terminated

ITEM	SPECIFICATION
AUDIO	HEAD: 1 Stationary head (Normal Audio)
	INPUT (except E/B/EG): Adaptor (Multi); −10dB, 47kΩ unbalanced MIC IN (M3); −70dB, 4.7kΩ unbalanced
	OUTPUT: Adaptor (Multi); −8dB 600Ω unbalanced
WEIGHT	Approx. 2.3kg (without Battery Pack)
DIMENSIONS	120(W) × 223(H) × 398(D)mm with view finder turned down (without carrying handle)
STANDARD ACCESSORIES	1 pc. Battery Pack (except NV-M7EM/AM) 2 pc. Battery Pack (NV-M7EM) 1 pc. Battery Pack Charging Connector (except NV-M7AM/A) 1 pc. DIN-DIN Coaxial Cable (except NV-M7AM/A) 1 pc. AC Adaptor (except NV-M7AM/A) 1 pc. Shoulder Strap 1 pc. AV Output Adaptor 1 pc. AV Input Adaptor (NV-M7EA/EM/A) 1 pc. Car Battery Cord (NV-M7EA/EM/A) 1 pc. Pause Remote Control Unit (NV-M7EA/EM/A) 1 pc. System Carrying Case (except NV-M7EG/EN/AM) 1 pc. Character Generator (NV-M7B)

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

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Technical Information

1. SERVICE CAUTION

1. Preparation for Camera Adjustment

Remove cabinet parts and remove camera section from VTR refering disassembly section and place them as shown in Fig. 1.

Connection of Extension Cable (A) (VFK0430) and Camera Holder (refer to next item) are necessary for servicing.

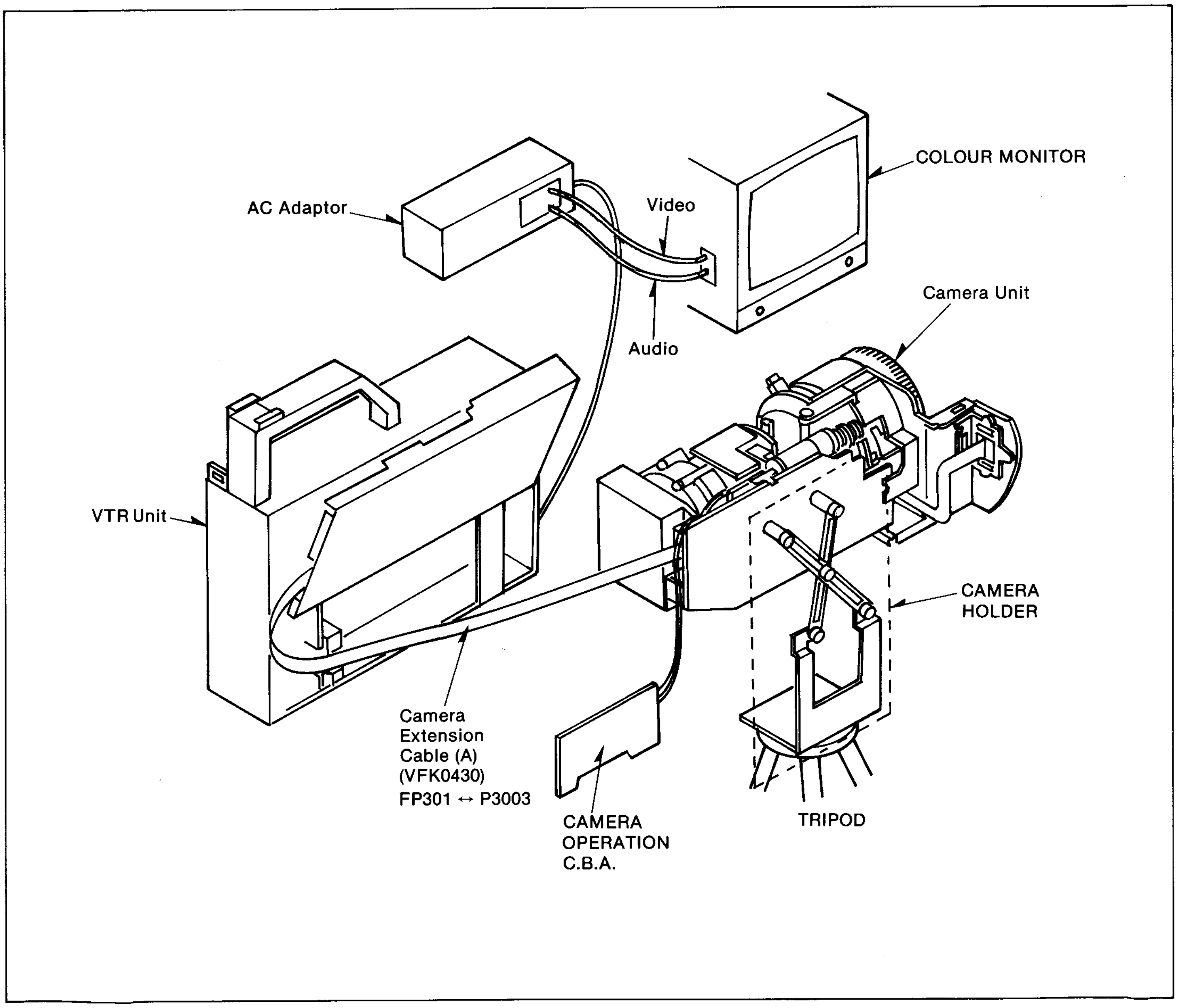
COLOUR MONITOR
AC Adaptor
Video
Audio
Camera Unit
VTR Unit
CAMERA HOLDER
Camera Extension Cable (A) (VFK0430) FP301 ↔ P3003
CAMERA OPERATION C.B.A.
TRIPOD

Fig. 1

2. How To Use Camera Holder Arm (VFK0431)

This Camera Holder Arm which is adjustable the span must be mounted to VFK0382 (Camera Holder of NV−M5) and it can be used with VFK0432 for camera adjustments or checking for NV−M7.

(A) –––	VFK0432	Holder Spacer (2pcs.)
(B) –––	VFK0431	Camera Holder Arm
(C) –––	XSN26+18	Screw (2pcs.)
(D) –––	VFK0382	Camera Holder

(1) Fix the Holder Arm (4) and (5) temporarily by screw (1) as shown in Fig. 2.
(2) Mount the Camera Holder Arm (B) to the Camera Holder (D) by screws (2) and (3) as shown in Fig. 3.
(3) Tightn the screws (C) with the Holder Spacers (A) as shown in Fig. 2.

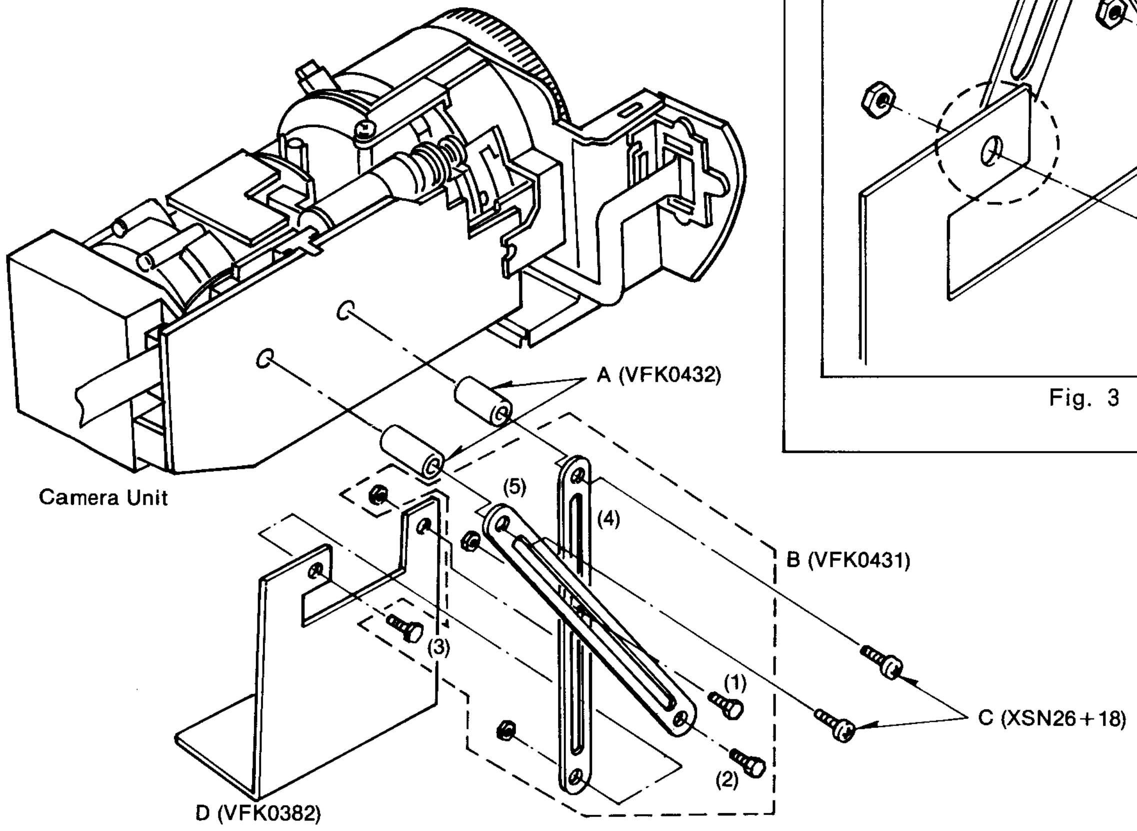

Fig. 2

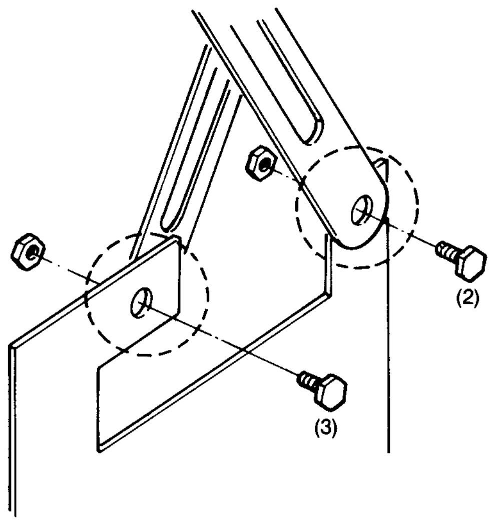

Fig. 3

3. Servicing the Camera Section

When servicing the Camera Section, connection of 18 Pin extension cable (B) (VFK0380) and 2 Pin extension cable (C) (VFKS0060) are necessary as shown in Fig. 4.

4. Connection of the Flexible Cables to Trap Connectors

a. Removal

1) On the trap Connector, pull out on both ends of the Locking Tab surrounding the cable end to release the Trap on the Connector. Then pull Flexible Cable out to remove as shown in Fig. 5.

b. Installation

1) Insert the end of the Flexible Cable into the Trap Connector so it lays smoothly across the slot.
2) Press the middle of the cable firmly against the Trap Connector slot, and hold it securly.
3) Without pinching the Cable, press the Locking Tabs in against the Trap Connector until both ends snap into their locked positions.
4) Pull lightly on the Cable to check for positive connection.

Note:
1) Take care when removing or installing the Flexible Cable to prevent Cable damage.

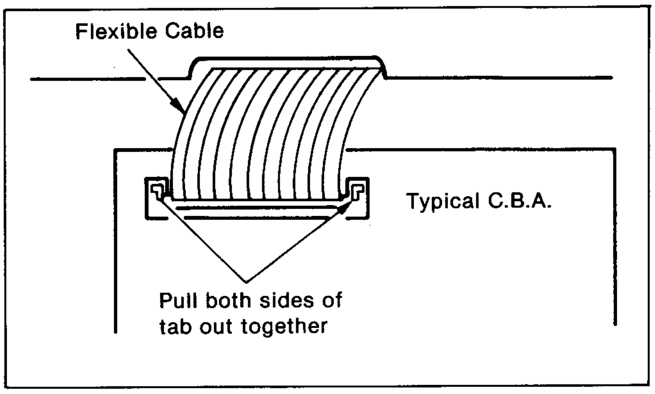
Flexible Cable
Typical C.B.A.
Pull both sides of tab out together

Fig. 5

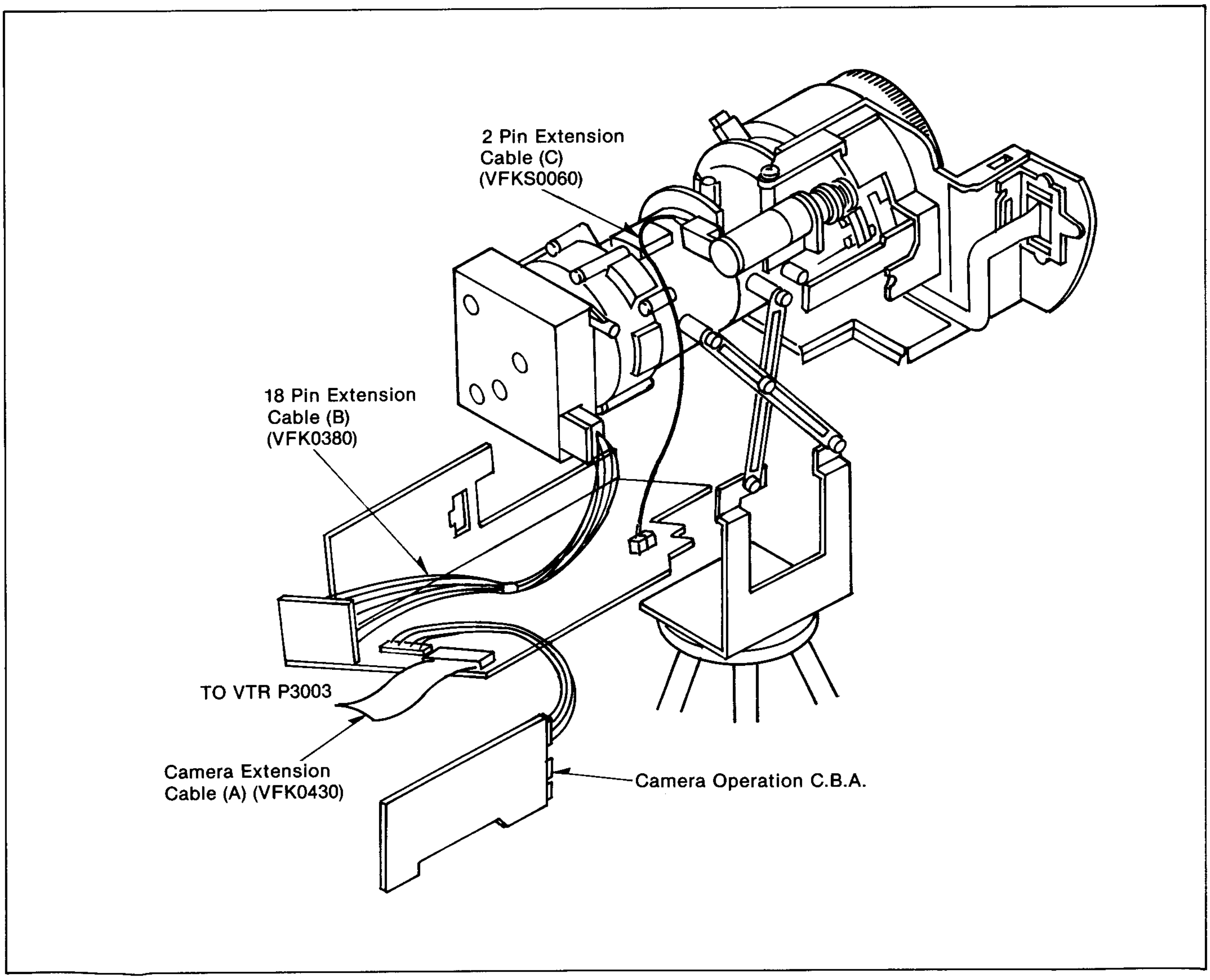
2 Pin Extension Cable (C) (VFKS0060)
18 Pin Extension Cable (B) (VFK0380)
TO VTR P3003
Camera Extension Cable (A) (VFK0430)
Camera Operation C.B.A.

Fig. 4

Memo

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MECHANICAL REPLACEMENT PARTS LIST
ELECTRICAL REPLACEMENT PARTS LIST

SECTION 1
GENERAL DESCRIPTION

1. HOW TO USE VHS MOVIE

1-1. FEATURES

1. PIEZO AUTO FOCUS

The focus is always automatically and precisely adjusted under all shooting situations. There is no need to manually adjust the focus; manual focus adjustment is also possible.

2. THE VHS MOVIE USES STANDARD VHS VIDEO CASSETTE

It extends the maximum recording time to a full 4 hours.

3. CUE & REVIEW PLAYBACK

Convenient for fast-forwarding or rewinding the tape while watching the picture.

4. COMPACT, LIGHTWEIGHT AND SUPER-PORTABLE

With a weight of only 2.3 kg, the VHS Movie is handy to use and carry along.

5. 3-WAY POWER SUPPLY

The VHS Movie can be operated on 3 different power sources: rechargeable battery pack, AC adaptor or car battery cord.

6. AUTO WHITE BALANCE

The white balance is fully automatically adjusted and continuously readjusted to any changes in illumination during shooting. Manual adjustment is also possible.

7. ALARM INDICATIONS

Various warning indications prevent operating mistakes and always assure successful results.

8. 6 × POWER ZOOM LENS

Powerful, smooth zooming between wide-angle and telephoto is simple with convenient push-button control.

9. HIGH SPEED SHUTTER FUNCTION

This function makes it possible to catch even super-fast action with sharp contours and amazing detail.

10. AUDIO DUBBING FUNCTION

The Audio Dubbing function allows replacing the originally recorded sound with narration, back-ground music or special sound effects.

11. INSERT EDITING

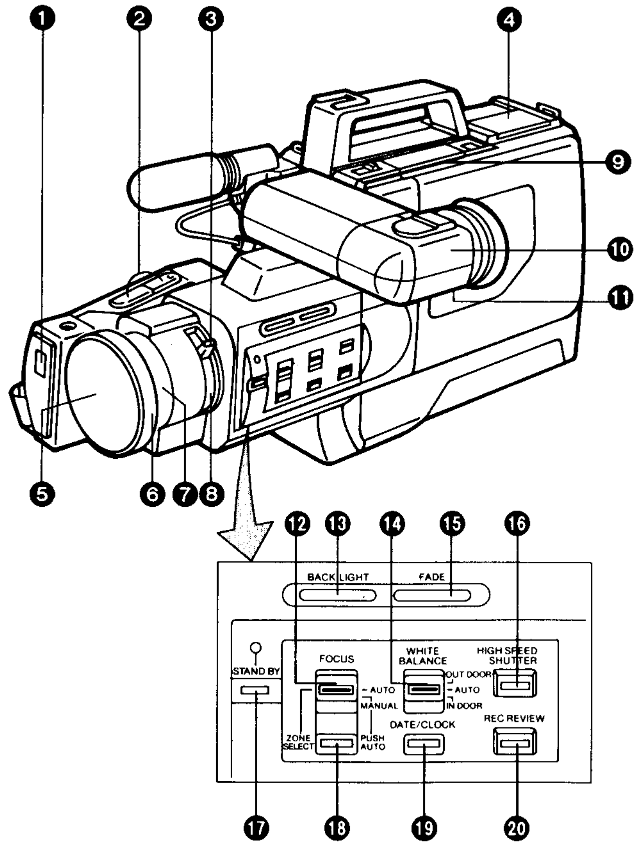
Insert Editing (or Insert Recording) is handy for editing tapes by inserting new scenes into an already recorded video tape.

12. HQ (HIGH QUALITY) PICTURE SYSTEM

Video recorders carrying the HQ symbol mark feature the new VHS High Quality Picture System. This system assures complete compatibility with VTRs that use the conventional VHS system.

1-2. CONTROLS AND COMPONENTS

RIGHT VIEW

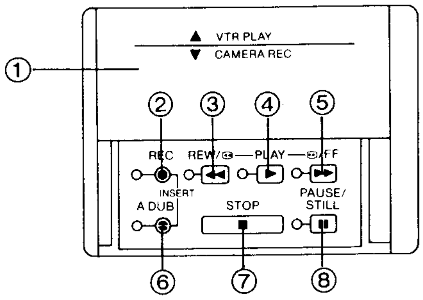


① White Balance Sensor Window

② Power Zoom Control Buttons

③ Manual Zoom Lever with Macro Button

❹ Tape Running Buttons



①
▲ VTR PLAY
▼ CAMERA REC
② ③ ④ ⑤
REC
REW/⊡—PLAY—⊡/FF
INSERT
A DUB
STOP
PAUSE/ STILL
⑥ ⑦ ⑧

① Camera/VTR Operation Selector Cover

Before starting camera recording, slide this cover close to conceal the Tape Running Buttons and render them inoperative.
For playback, audio dubbing, tape copying and other VTR operations, open this cover. This renders the Start/Stop Button and other operation controls for camera recording inoperative.

② Record Button
③ Rewind/Review Button
④ Play Button
⑤ Fast Forward/Cue Button
⑥ Audio Dubbing Button
⑦ Stop Button
⑧ Pause/Still Button

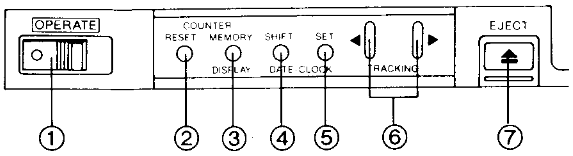
❺ Lens Cap

❻ Lens Hood

❼ Focus Ring

❽ Zoom Ring

❾ General Operation Controls



OPERATE
COUNTER
RESET
MEMORY
SHIFT
SET
DISPLAY
DATE CLOCK
TRACKING
EJECT
① ② ③ ④ ⑤ ⑥ ⑦

① Operation On/Off Switch
② Reset Button
③ Memory Button
④ Date Shift Button
⑤ Date Set Button
⑥ Tracking Adjust Buttons
⑦ Eject Button

❿ Electronic Viewfinder

⓫ Eyepiece Corrector Control

⓬ Focus Mode Selector

⓭ Back Light Button

⓮ White Balance Mode Selector

⓯ Fade Button

⓰ High Speed Shutter Selector

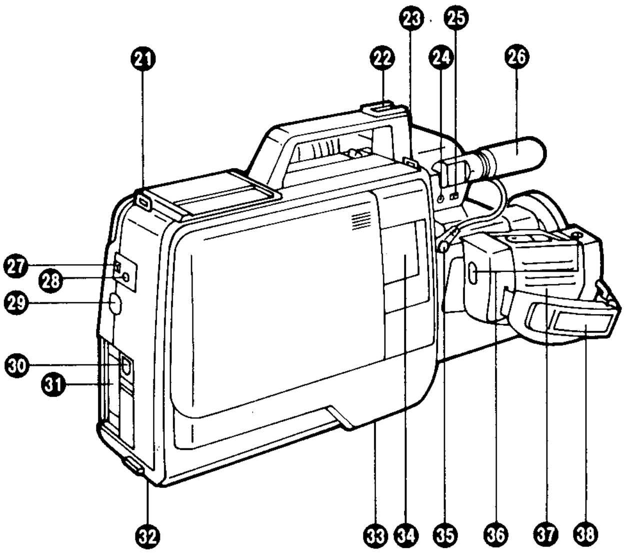
⓱ Standby Button with Indicator

⓲ Focus Adjusting Button/Zone Selector

⓳ Date/Clock Selector

⓴ Rec Review Button

LEFT VIEW



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㉑ Metal Fitting for Shoulder Strap

㉒ Accessory Shoe

㉓ Metal Fitting for Shoulder Strap

㉔ External Microphone Socket

㉕ Microphone Sensitivity Selector

㉖ Built-in Microphone

㉗ Edit Switch

㉘ Remote Control Socket

㉙ Adaptor Socket

㉚ Battery Eject Button

㉛ Battery Compartment

㉜ Battery Compartment for Auto Date/Clock

㉝ Tripod Receptacle

㉞ Cassette Compartment

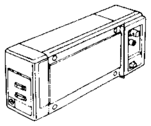
㉟ EVF Terminal

㊱ Start/Stop Button

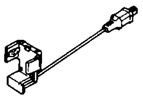
㊲ Handgrip

㊳ Grip Belt

1-3. VHS MOVIE SYSTEM

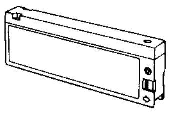


AC Adaptor



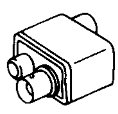
Battery Pack Charging Connector

NV-M7E, B, EG, EO, EN, EA, EM ...Supplied
NV-M7A, AM ...Optional

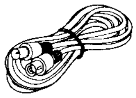


Battery Pack

NV-M7E, B, EG, EO, EN, EA, EM, A ...Supplied
NV-M7AM ...Optional

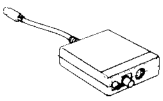


AC Converter Connector (supplied)



DIN-DIN Coaxial Cable

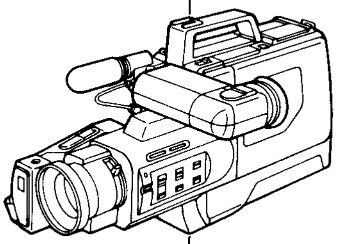
NV-M7E, B, EG, EO, EN, EA, EM ...Supplied
NV-M7A, AM ...Optional

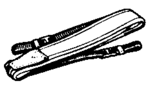


Line Adaptor (VW-KM3)

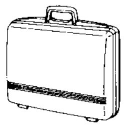
NV-M7A, EA, EM ...Supplied
NV-M7EO, EN, AM ...Optional

Batteries for Clock Operation (supplied)



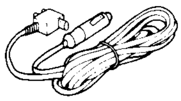


Shoulder Strap (supplied)



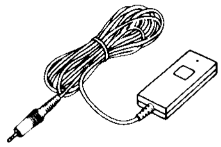
System Carrying Case

NV-M7E, B, EO, A, EA, EM, ...Supplied
NV-M7EN, AM ...Optional



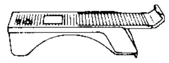
Car Battery Cord (VW-ACM1)

NV-M7A, EA, EM ...Supplied
NV-M7E, B, EG, EO EN, AM ...Optional

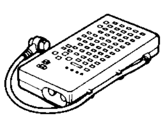


Pause Remote Control Unit (VW-RM1)

NV-M7, A, EA, EM ...Supplied
NV-M7E, B, EG, EO, EN, AM ...Optional



Shoulder Pad (VW-SP7) (optional)

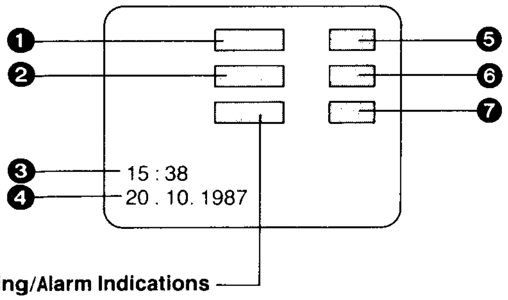


Character Generator

NV-M7B ...Supplied
NV-M7E, EG, EO, EN, A, EA, EM, AM ...Optional

1-4. EVF INDICATIONS

The following indications are displayed in the Electronic View Finder(EVF) to inform you of the operating conditions of the VHS Movie.



Warning/Alarm Indications

BATT	There is little battery power left. The VHS Movie will be turned off in a few minutes. Replace the battery pack by a fully recharged one.
TAPE	It is impossible to record because the erasure prevention tab of the cassette is not intact.
END	The tape has almost reached its end. Replace the tape with a new one.
DEW	When condensation has formed inside the VHS Movie, the "DEW" indication will flash and a few seconds later, the unit will turn itself off.

❶ Remaining Battery Power Indication

E----F	The "▬" indications begin to disappear from right to left as the power of the battery pack weakens.

❷ Counter Indication

M0123	Tape Counter
1 2 :34	Lap Time Counter

❸ Clock Indications

❹ Date Indications

❺ Recording/Insert Indication

REC	Recording
---	Recording Pause
INST	Insert
---	Insert Pause

❻ High Speed Shutter Mode Indication

1/500	1/500 sec.
1/1000	1/1000 sec.

❼ Manual White Balance Indication

OUT	OUTDOOR
IN	INDOOR

- Some of the above indications may light up alternately at the same place in the EVF to indicate the corresponding operating condition or warning.

SECTION 2
ADJUSTMENT PROCEDURES

2-1. DISASSEMBLY PROCEDURES

2-1-1. DISASSEMBLY FLOW CHART

This flow chart indicates disassembly steps for the cabinet parts and the P.C. boards in order to find the items necessary for servicing.
When reassembling perform the steps in the reverse order.

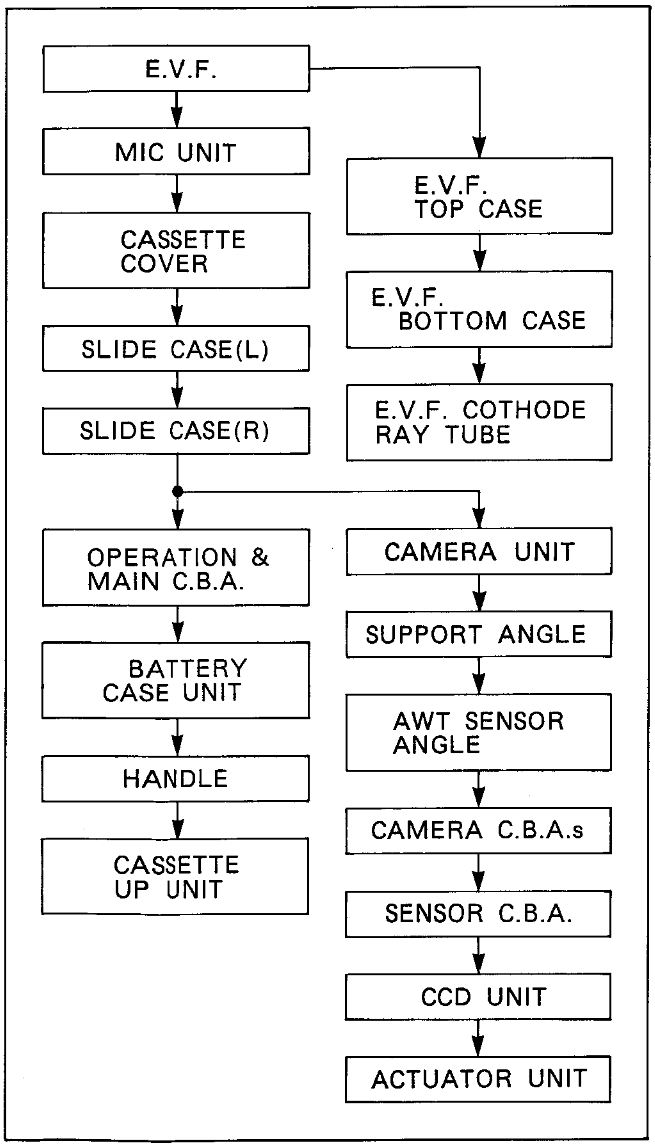

E.V.F.
MIC UNIT
CASSETTE COVER
SLIDE CASE(L)
SLIDE CASE(R)
OPERATION & MAIN C.B.A.
BATTERY CASE UNIT
HANDLE
CASSETTE UP UNIT
E.V.F. TOP CASE
E.V.F. BOTTOM CASE
E.V.F. COTHODE RAY TUBE
CAMERA UNIT
SUPPORT ANGLE
AWT SENSOR ANGLE
CAMERA C.B.A.s
SENSOR C.B.A.
CCD UNIT
ACTUATOR UNIT

Fig. D1

Note:
1. (1) When removing the cabinet, work with care so as not to break the locking tabs.
2. (2) Place a cloth or some other soft material under the P.C. Boards or Unit to prevent damage.
3. (3) When re-installing, ensure that the connectors are connected and electrical components have not been damaged.
4. (4) Do not supply power to the Unit during disassembly.

2-1-2. DETAILED DISASSEMBLY METHOD

1. Removal of E.V.F. Unit

(1) Remove the E.V.F. Unit connector.
(2) Slide the E.V.F. Unit in the direction shown by the arrow.
(3) Remove the E.V.F. Unit while pushing on the Locking Lever on the Bottom of the Unit.

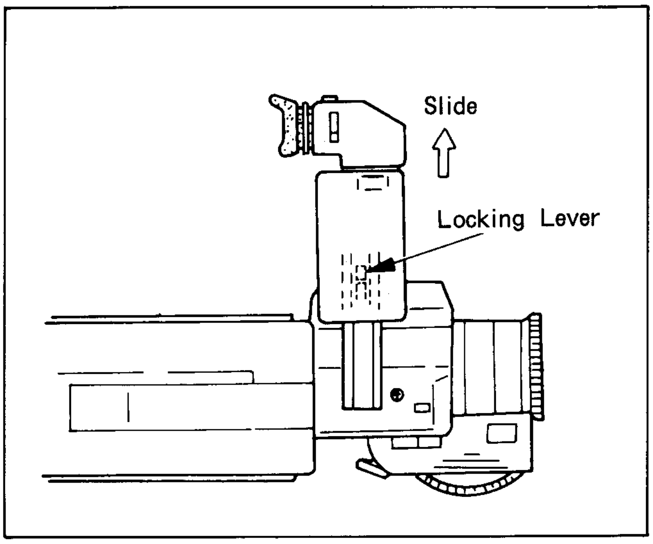

Slide
Locking Lever

Fig. D2

2. Removal of MIC Unit

(1) Remove 1 Screws (A).
(2) Slide the MIC Unit in the direction shown by the arrow.
(3) Disconnect the connector on the MIC Unit.

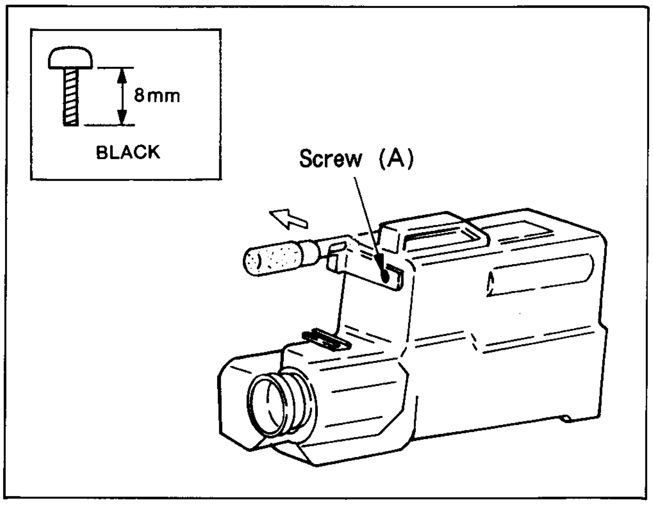

8mm
BLACK
Screw (A)

Fig. D3

3. Removal of Cassette Cover

(1) Remove 2 Screws (B).
(2) Pull the cassette Cover straight up to remove.

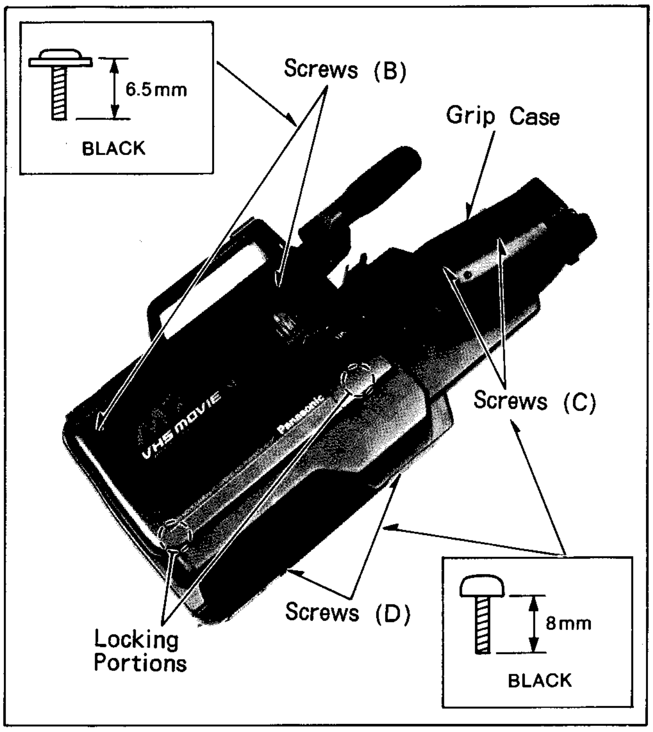

6.5mm
BLACK
Screws (B)
Grip Case
Screws (C)
Screws (D)
Locking Portions
8mm
BLACK

Fig. D4

Note:
Be carefull not to damage the Alignment Tabs, when removing or realigning the Cassette Cover.

4. Removal of Side Case (R) Unit

(1) Remove 4 Screws (E) in Fig.D5.
(2) Lift the Side Case (R) Unit slightly. Then disconnect the connectors on the Side Case (R) Unit.

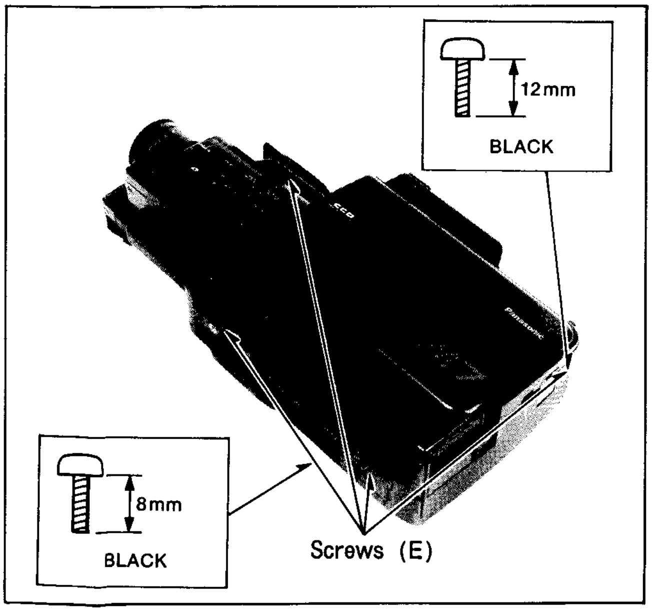

12mm
BLACK
8mm
BLACK
Screws (E)

Fig. D5

5. Removal of Side Case (L) Unit

(1) Remove 2 Screws (C) shown in Fig.D4.
(2) Remove 2 Screws (D) shown in Fig.D4.
(3) Remove the lens hood and remove screw (F) shown in Fig. D6.

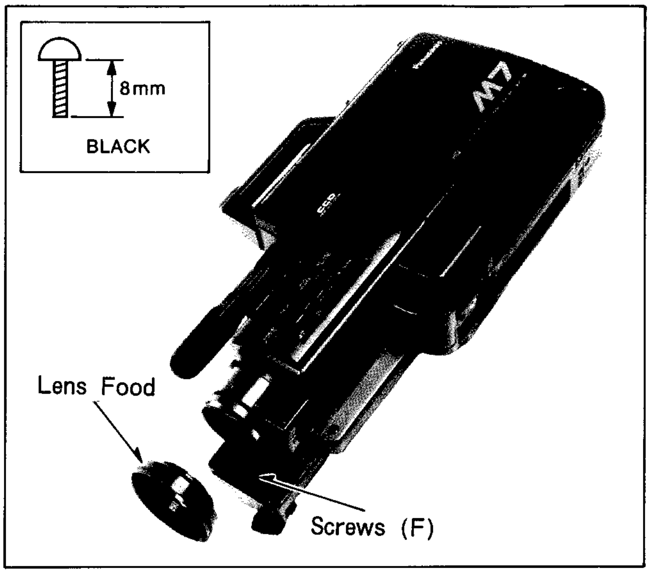

8mm
BLACK
Lens Food
Screws (F)

Fig. D6

(4) Lift the Side Case (L) Unit slightly. Then disconnect the connectors on the Side Case (L) Unit.

6. Removal of Operation Panel Unit

(1) Unlock 2 locking Tabs (H).
(2) Lift the operation panel unit up slightly.

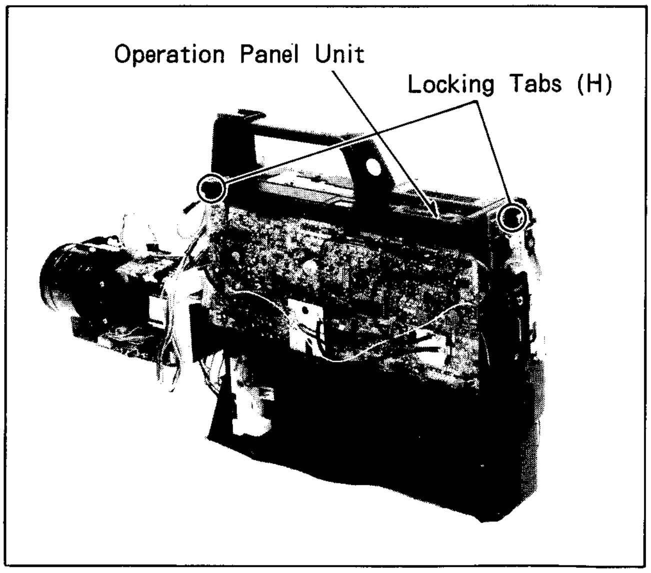

Operation Panel Unit
Locking Tabs (H)

Fig. D7

7. Opening of Operation C.B.A.

(1) Remove 2 screws (I).
(2) Disconnect P1 on operation C.B.A.
(3) Unsnap 2 locking Tabs (J).
(4) Open Operation/Main C.B.A.

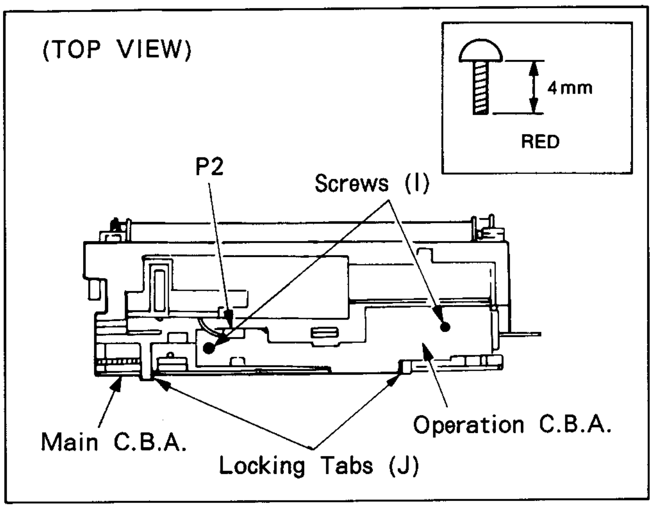

(TOP VIEW)
4mm
RED
P2
Screws (I)
Main C.B.A.
Operation C.B.A.
Locking Tabs (J)

Fig. D8

8. Opening of Battery Case Unit

(1) Open Main/Operation C.B.A. as shown in Fig.D9.
(2) Remove 3 screws (K). Then lift the Battery Compartment slightly in order to release it from the locking pin.
(3) Loosen wires located around the Battery Compartment.

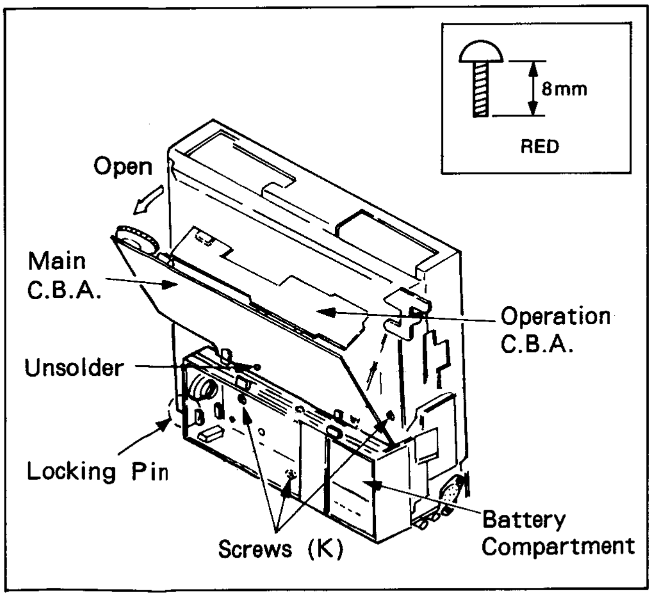

8mm
RED
Open
Main C.B.A.
Operation C.B.A.
Unsolder
Locking Pin
Screws (K)
Battery Compartment

Fig. D9

9. Removal of Handle Unit

(1) Slightly loosen 4 screws (L).
(2) Remove the Handle unit.

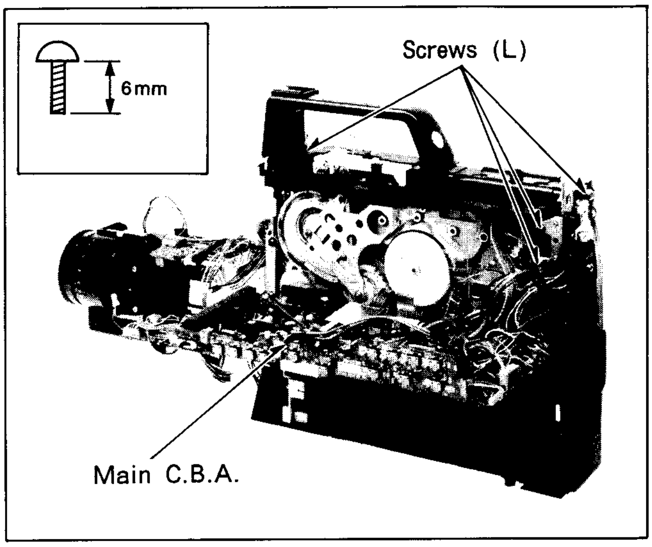

6mm
Screws (L)
Main C.B.A.

Fig. D10

10. Removal of Cassette Compartment

(1) Remove 4 screws (M).
(2) Remove the cassette up unit.

Note:
When reinstalling the cassette up unit, install it in the closed (cassette down) condition.

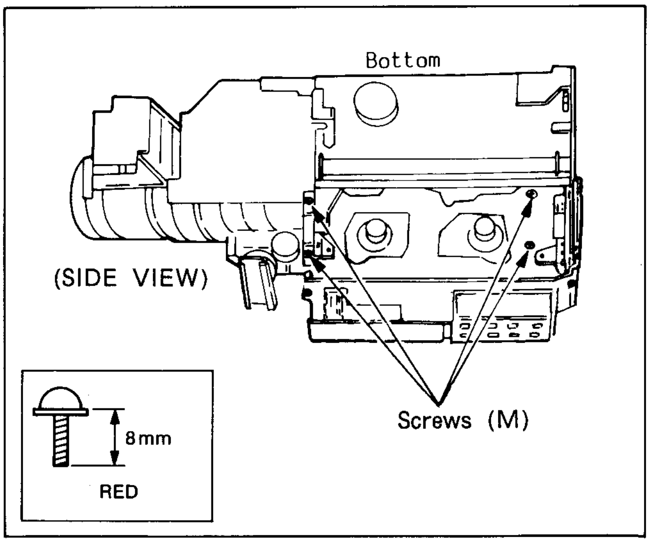

Bottom
(SIDE VIEW)
8mm
RED
Screws (M)

Fig. D11

11. Removal of Camera Unit

(1) Remove 2 screws (N).
(2) Disconnect connector P3004 and flexible connector P3003 on Main C.B.A.

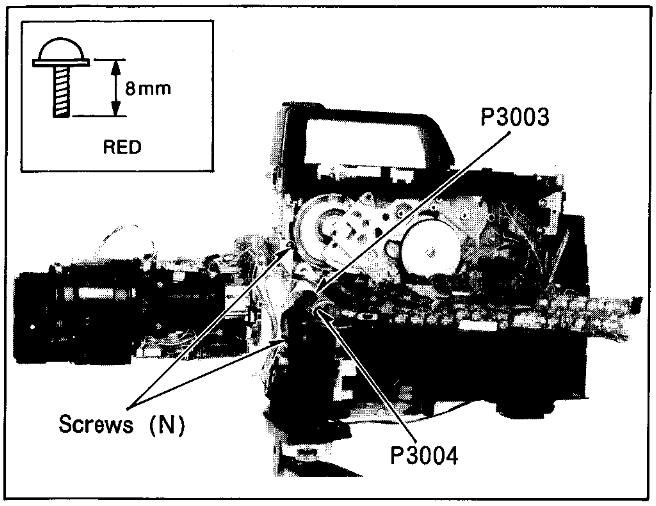

8mm
RED
P3003
Screws (N)
P3004

Fig. D12

12. Removal of Support Angle

(1) Remove 2 screws (O).
(2) Remove Support Angle.

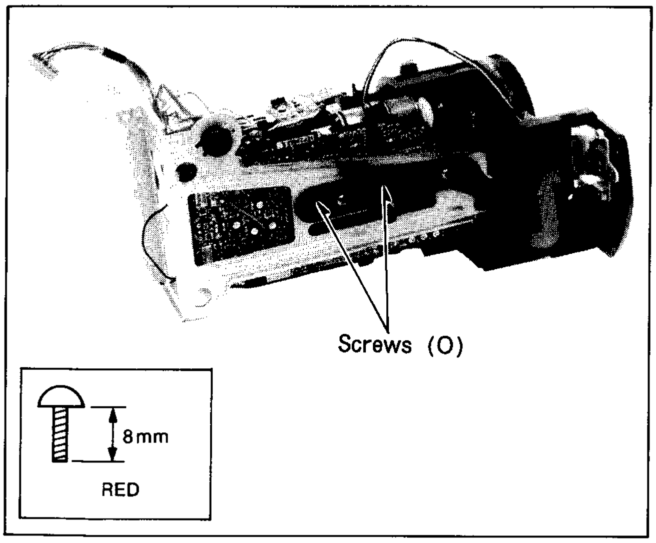

Screws (O)
8mm
RED

Fig. D13

13. Removal of AWT Sensor Support Angle

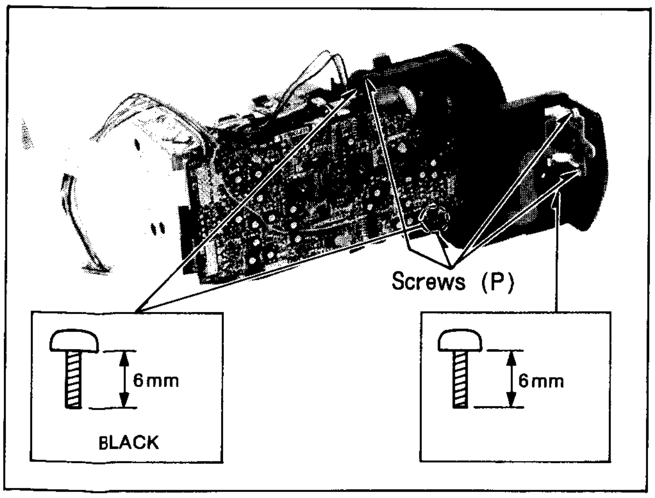

Screws (P)
6mm
BLACK
6mm

Fig. D14

(1) Remove 3 screws (P).
(2) Remove AWT Sensor Support Angle.

14. Removal of Camera C.B.A.

(1) Remove 6 screws (Q) on Auto Focus and Process C.B.A's.
(2) Disconnect Connectors B3202 and B301 on process C.B.A.
(3) Remove Auto Focus and Process C.B.A.

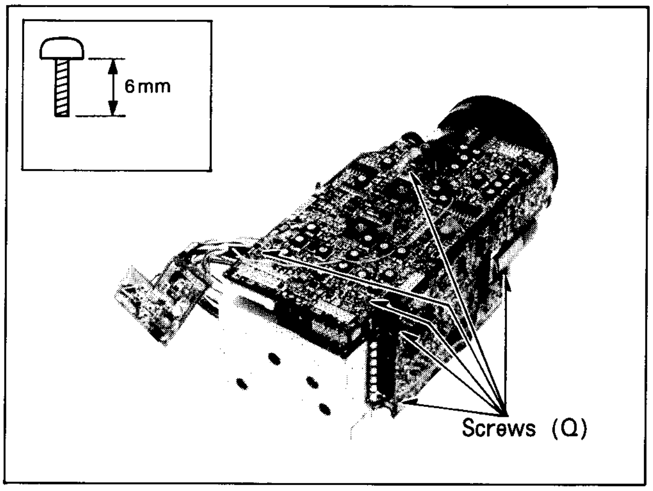

6mm
Screws (Q)

Fig. D15

15. Removal of Sensor C.B.A.

(1) Remove the 3 screws (R).
(2) Remove Shield Case.

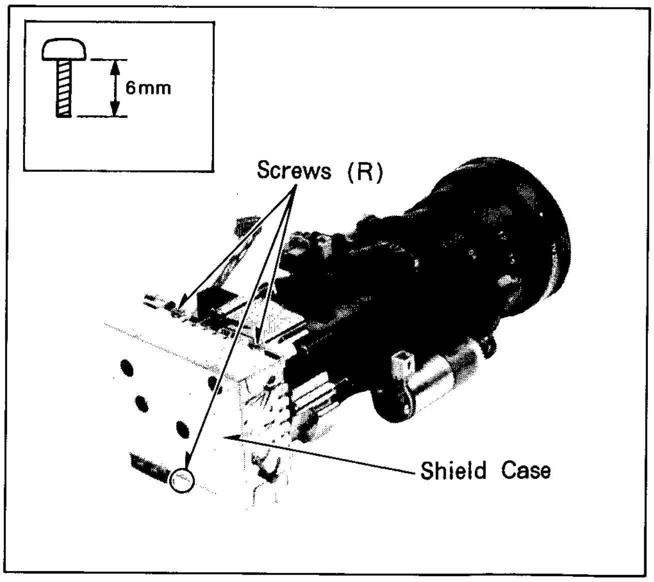

6mm
Screws (R)
Shield Case

Fig. D16

(3) Remove 2 screws (S) on sensor C.B.A.
(4) Remove Sensor C.B.A. then remove flexible wire FP201. on Sensor C.B.A.

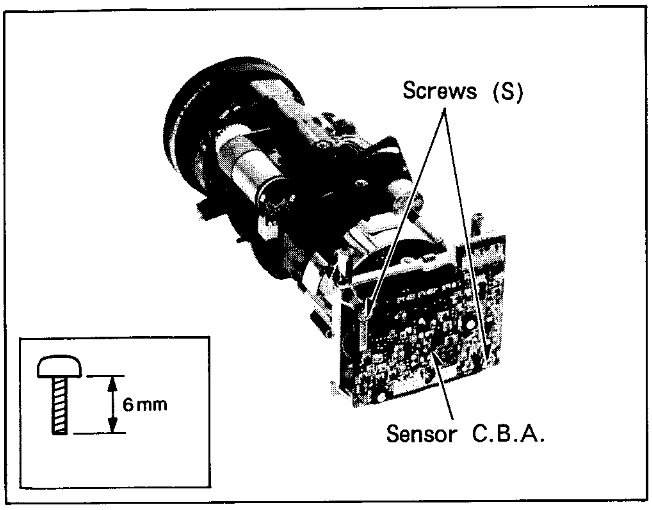

Screws (S)
6mm
Sensor C.B.A.

Fig. D17

16.Removal of CCD Unit

(1) Remove 2 screws (T) then take out the Shield Case.
(2) Remove 3 screws (U) then take out the Shield Case.
(3) Remove 2 screws (V) then take out the CCD Unit.

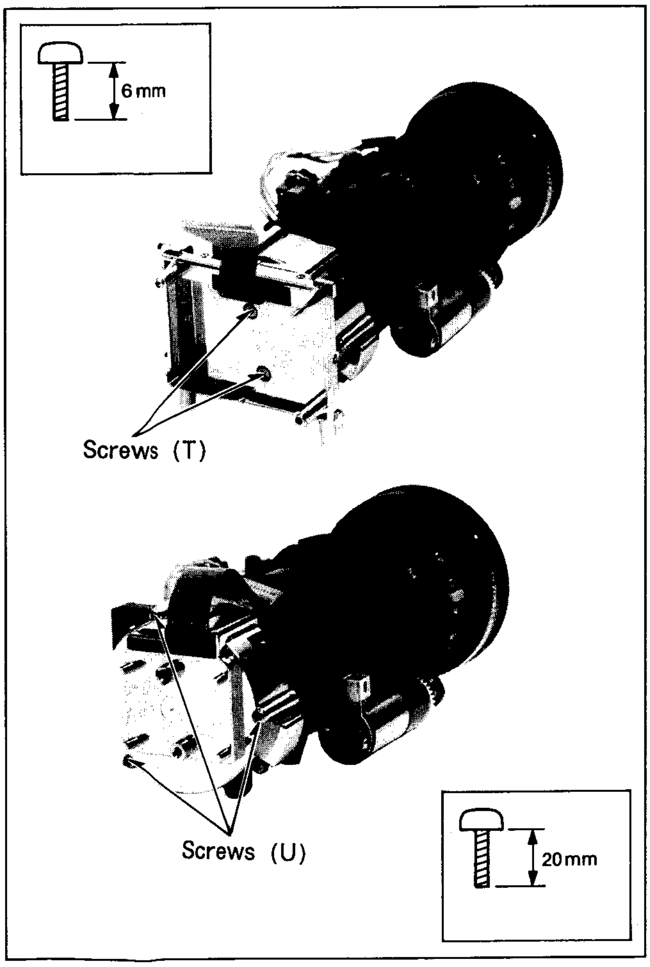

6mm
Screws (T)
Screws (U)
20mm

Fig. D18

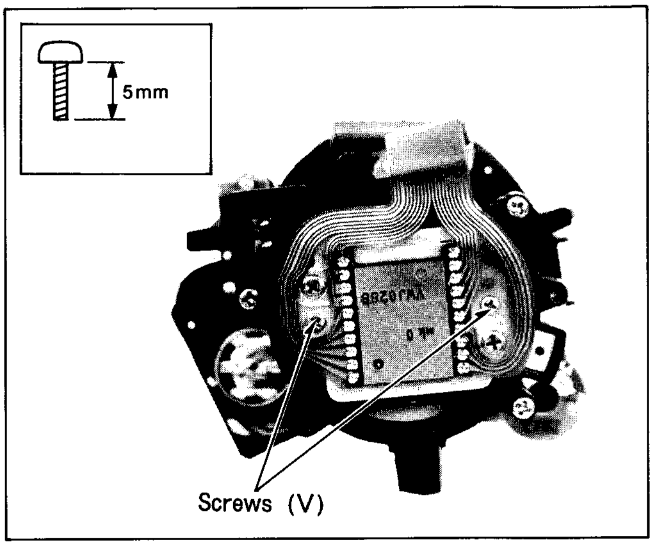

5mm
Screws (V)

Fig. D19

17.Removal of Actuator Unit

(1) Remove 3 screws (W) and remove actuator unit.

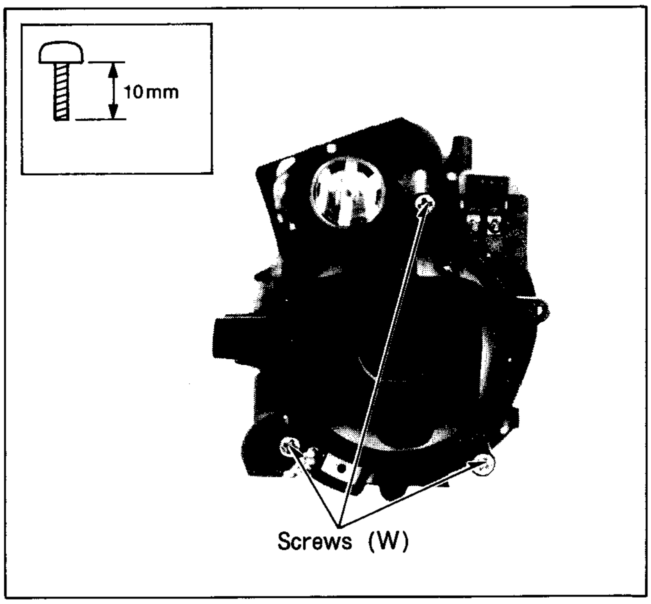

10mm
Screws (W)

Fig. D20

18. Disassembly of E.V.F. Unit

(1) Remove 2 Screws (A) on the bottom of the E.V.F. Unit and then remove the Bottom Case.
(2) Remove CRT Case–B from CRT Case–A as shown in Fig. D21.
(3) Lift the CRT Assembly up as shown in Fig. D22 to remove it from the CRT Case–A.
(4) Rotate Nut (B) and then pull DY Assembly in the direction shown in Fig. D23 to remove it. Then the CRT can be replaced.
(5) For reinstallation, reverse the above steps.

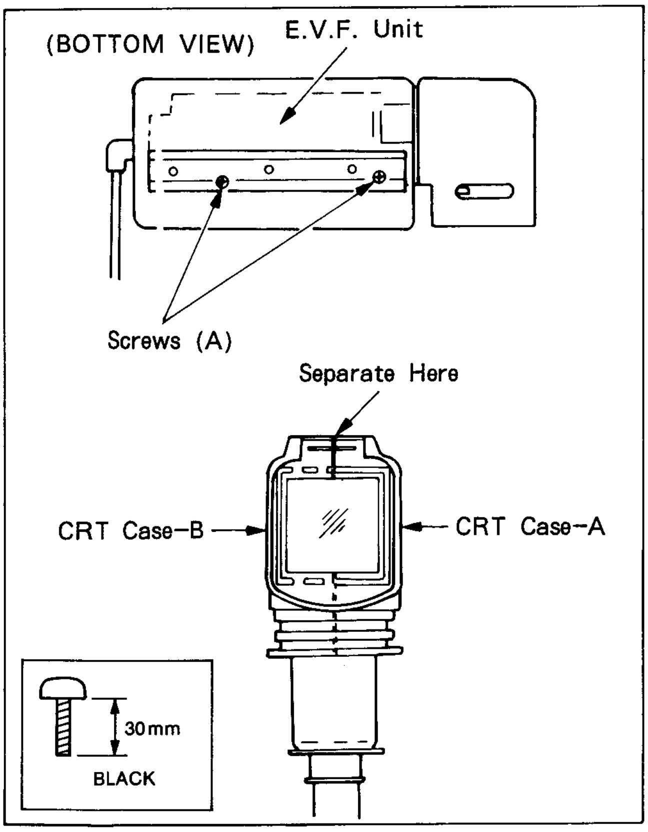


Fig. D21

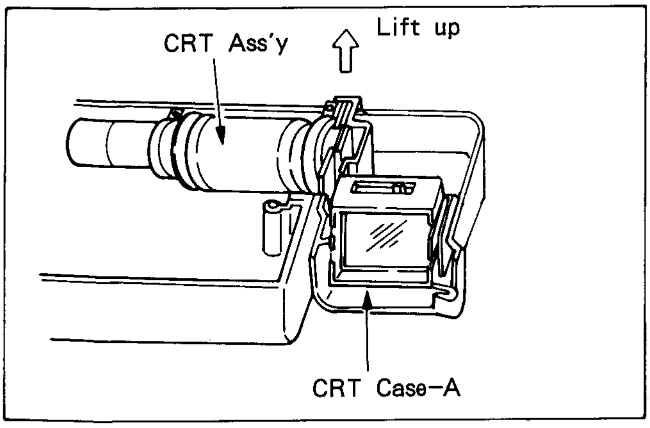


Fig. D22

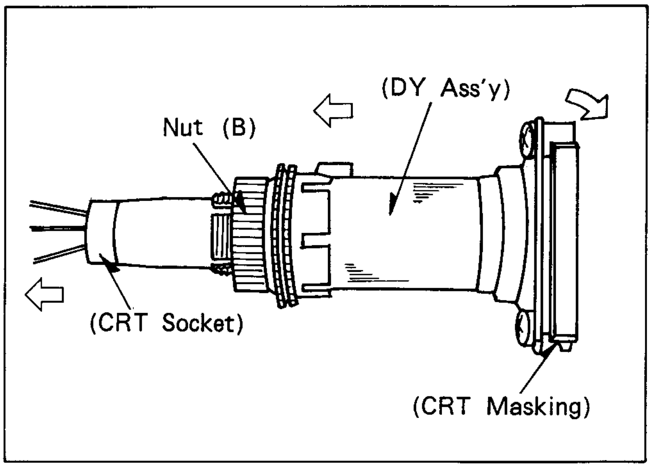


Fig. D23

2-2. REPLACEMENT PROCEDURES

2-2-1. Replacement of CCD Unit

(1) After removing of the CCD unit, install the new CCD unit.
(2) Assemble the unit subject to the reverse steps of disassembly procedures.

NOTE:
(1) Do not touch the sureface of CCD unit.
(2) Confirm the whole adjustment procedures for Camera section after replacing this CCD unit.

2-2-2. Replacement of Zoom Motor Unit

(1) Remove 2 screws (C) and remove Zoom Motor Unit.
(2) Install the new Zoom Motor Unit.
Prior to this replacement, no dust around the Zoom Motor, especially around the gear unit should be confirmed.

2-2-3. Replacement of Focus Motor Unit

(1) Remove the 2 screws (D) and remove the Focus Motor Unit.
(2) Install the new Focus Motor Unit.
Prior to this replacement, no dust around the Focus Motor Unit, especially around the gear should be confirmed.
(3) After this replacement, all the correct adjustments for all parts of auto–focus should be comfirmed.

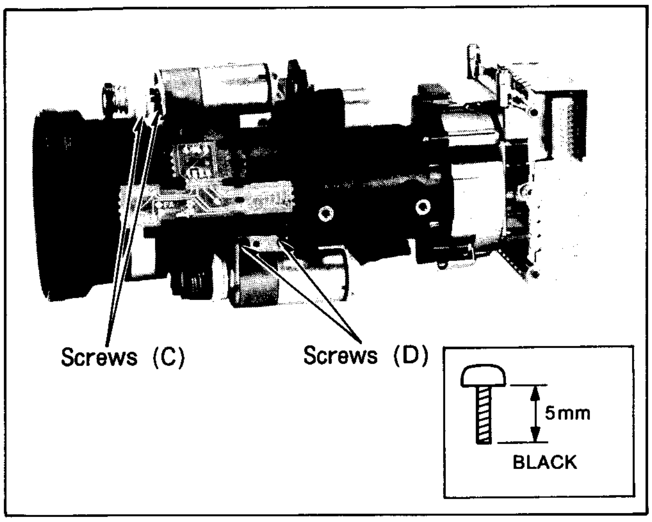

Screws (C)
Screws (D)
5mm
BLACK

Fig. R1

2-2-4. Replacement of DD Cylinder Unit

Work with extreme care when removing or replacing the DD cylinder unit.
Do not touch video heads during servicing.

(1) Remove the screw (E) to take the Earth Holder Unit out.

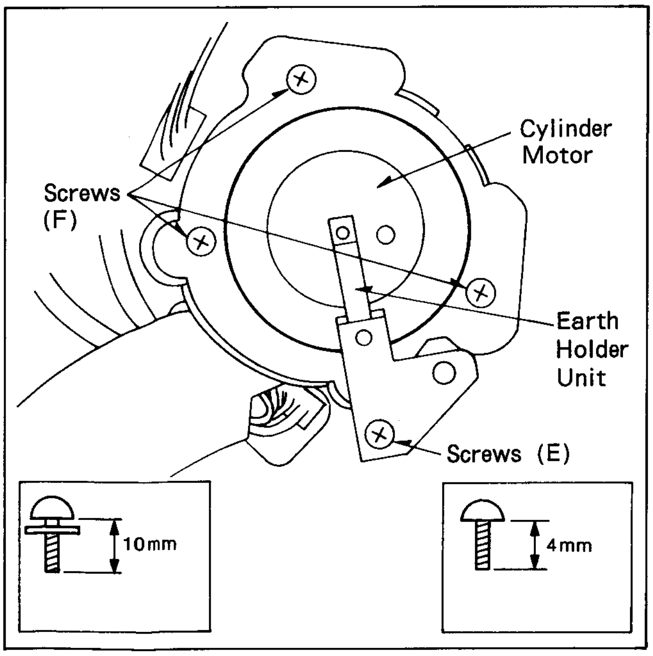

Cylinder Motor
Screws (F)
Earth Holder Unit
Screws (E)
10mm
4mm

Fig. R2

(2) Remove the 3 screws (F) to take DD cylinder unit out.

NOTE :
Since there is very little clearance between DD cylinder unit and chassis,handle with care.

(3) Reinstall the new DD cylinder unit, tighten the 3 screws (F).

2-2-5. Replacement of Uppper Cylinder Unit

Be sure to observe the following procedures when replacing Upper Cylinder Unit.

(1) REMOVING THE UPPER CYLINDER UNIT

a. Remove the 2 screws as shown in Fig.R3.
b. Unsold the 10 soldered portions indicated by arrows on Circuit Board.
c. Remove the Upper Cylinder Unit by lifting it upwards.

NOTE:
Soldered portion can be easily removed by using solder sucking wire, etc.

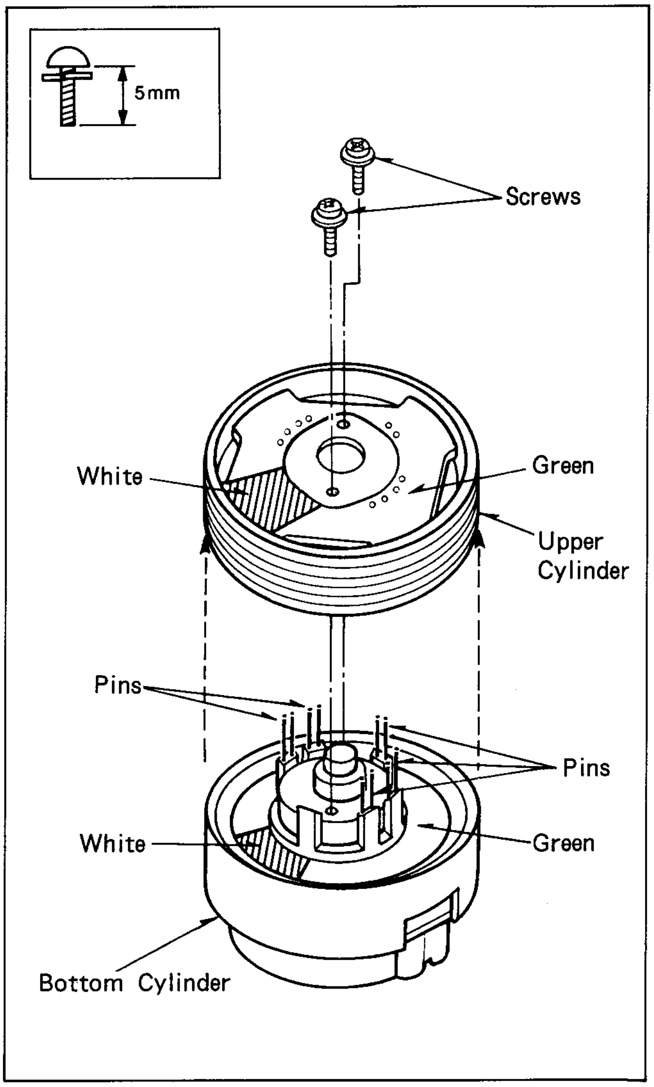

5mm
Screws
White
Green
Upper Cylinder
Pins
Pins
White
Green
Bottom Cylinder

Fig. R3

(2) REINSTALLING THE UPPER CYLINDER UNIT

The Upper Cylinder Unit can be reinstalled by reversing the removal procedure. However, when reinstalling, it must be extremely careful so that both the white and green portions of the Circuit Board on the Upper Cylinder Unit will correctly match the white and green portions of the Circuit Board on Bottom Cylinder as shown in Fig.R4.

NOTE:

If the Upper Cylinder Unit is reversely installed, no colour will appear when playing back a pre-recorded tape.

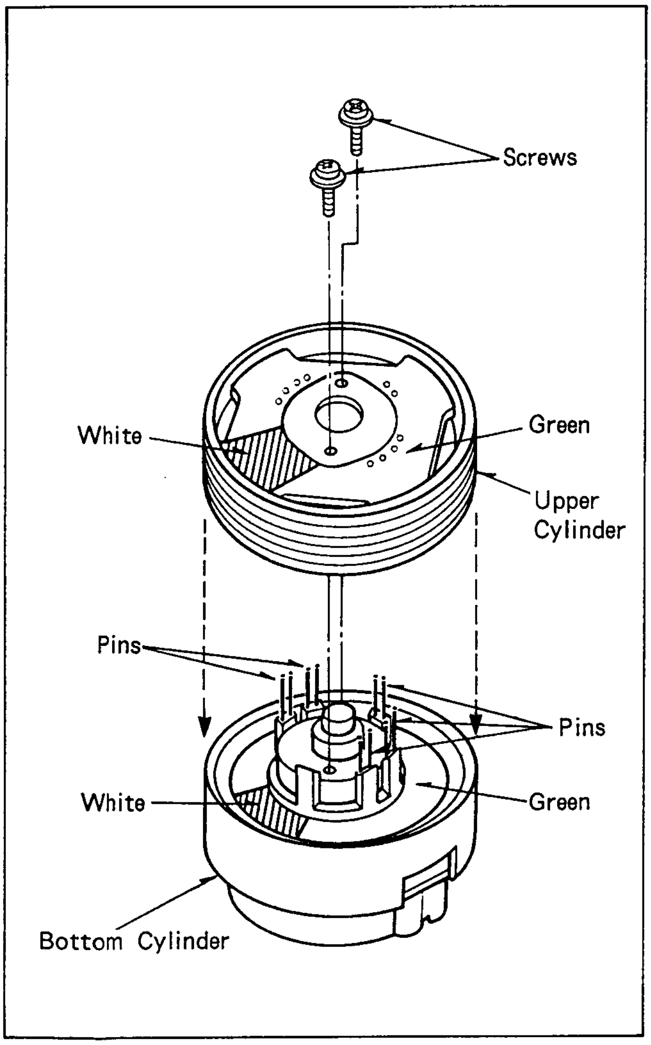


Fig. R4

2-3. MECHANICAL ADJUSTMENT PROCEDURES

The mechanical adjustment procedures of NV−M7 is the same as NV−M3's one, refer to service manual NV−M3 (order NO.VRD8508135, VRD8509136), except following confirmation and adjustment.

2−3−1. CONFIRMATION OF BRAKE TORQUE
2−3−2. BACK TENSION ADJUSTMENT
2−3−3. CONFIRMATION OF A/C HEAD HEIGHT

2-3-1. Confirmation of Brake Torque

- Equipment Required:
  Dial Torque Gauge
  Adaptor for Gauge
- Specification: ------ see spec, table (Fig. M2)

(1) Remove the cassette compartment by unscrewing 4 screws.
(2) Attach the adaptor to the torque gauge and place the unit in STOP mode.
(3) Place the torque on the reel table.

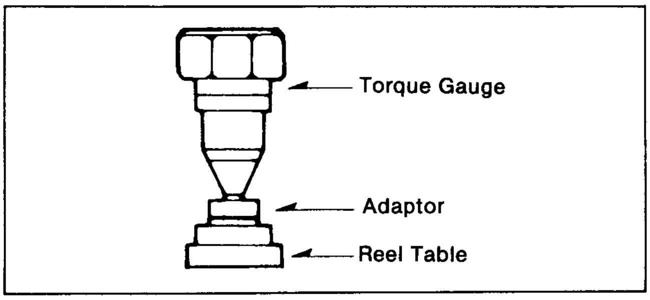
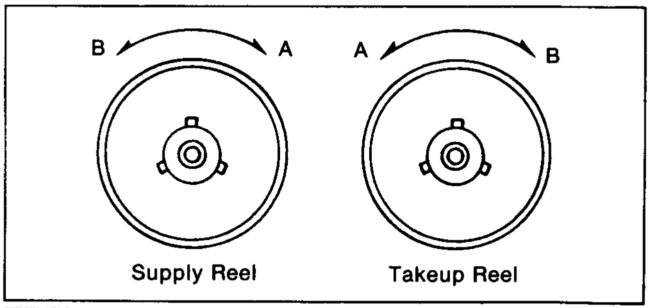


Fig. M1

(4) Turn torque gauge in either direction indicated in the Fig. M2, and read the gauge when the brake begins slipping.

Note:

If proper brake torque can not be optained, check the both take-up and supply clutch gear.



	A	B
Takeup	28+−8g−cm	28+−8g−cm
Supply	28+−8g−cm	28+−8g−cm

Fig. M2

2-3-2. Back Tension Adjustment

- * Equipment Required:
  Back Tension Meter
  VHS Cassette Tape
- * Specification: ------ 19 ~ 23g

1. Playback the cassette tape from the beginning and wait until the tape movement get the stabilization. (for approx. 10~20 seconds)
2. Insert the Back Tension Meter into the path of a tape, and measure the back tension to be within specification as shown in Fig. M3.

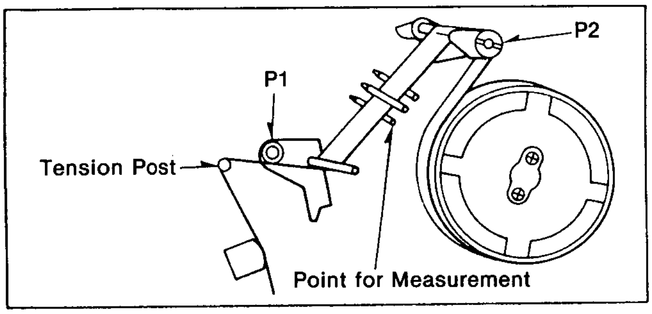


Fig. M3 Measurement of Back Tension

Note:

1. While measuring, make sure that the three probes of the meter are all in good contact with the tape.
2. As the tension meter is very sensitive, we recommend taking 3 separate readings.
3. If it is out of specification, change the spring notch as shown in Fig. M5.

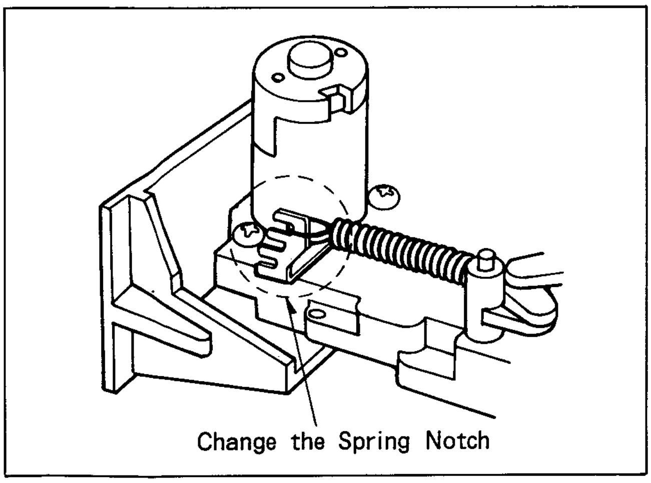


Fig. M4

2-3-3. Confirmation of A/C Head Height

Note:
Unless the A/C Head is replaced, this procedure should not be performed.

(1) Looking at the lower edge of the control head within the tape running, ensure that lower edge of the tape runs along 0.25mm far from lower edge of the control head. (litte bit up position from lower edge of control head.) If it doesn't, slightly turn the nut (A) in either direction to correct clockwise to lower the head and counterclockwise to raise it.

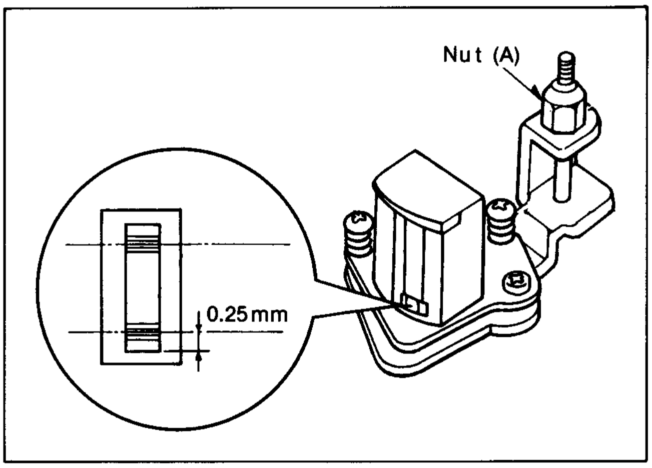


Fig. M5

2-4. ELECTRICAL ADJUSTMENT PROCEDURES

2-4-1. ELECTRICAL ADJUSTMENT FOR CAMERA SECTION

TEST EQUIPMENT AND TOOLS

The following equipment is required for adjustment of the CAMERA section of VHS Movie.

1. Oscilloscope
   Dual Trace, 25MHz, 2mV/DIV,
   10:1 Probe
   1:1 Probe
2. Digital Volt Meter or VTVM
3. Frequency Counter
4. Vectorscope
5. Light Meter
6. Tripod
7. Colour Video Monitor
8. Lighting
   140 footcandles (1400lux), on the chart surface 3200 degrees K.
9. Reflection Chart
   *Logarithmic Gray Scale Chart
   (Part No.:YWV2310RB99)
   *Colour Chip Chart
   (Part No.:YWV2100RB98)
   *Ball Chart
   (Part No.:YWV2100RB03)
   *Hunting Chart
   (Included in this Service Manual)
   *White Chart (Card)
   (The white paper is available as a white chart)
   *J Chart
   (Part No.:YWV2100RB3)
   *B/W Chart
   (Included in this Service Manual)
   *Gray–White Chart
   (Included in this Service Manual)
10. Plastic Tip Driver
11. Camera Unit Holder
    (Part No.:VFK0382)
12. Camera Holder Arm
    (Part No.:VFK0431)

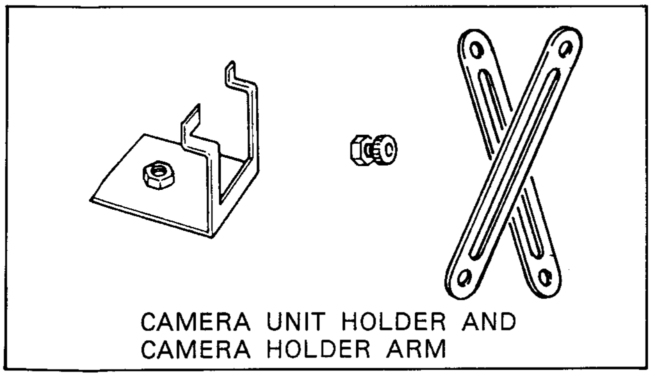

CAMERA UNIT HOLDER AND
CAMERA HOLDER ARM

Fig. C1

13. Color temperature conversion filter
    *C12 Filter
    (Part No.:VFK0374)
    *C2 Filter
    (Part No.:VFK0375)
14. Camera Extension Cables
    (Part No.:VFKS0060, VFK0380, VFK0430)

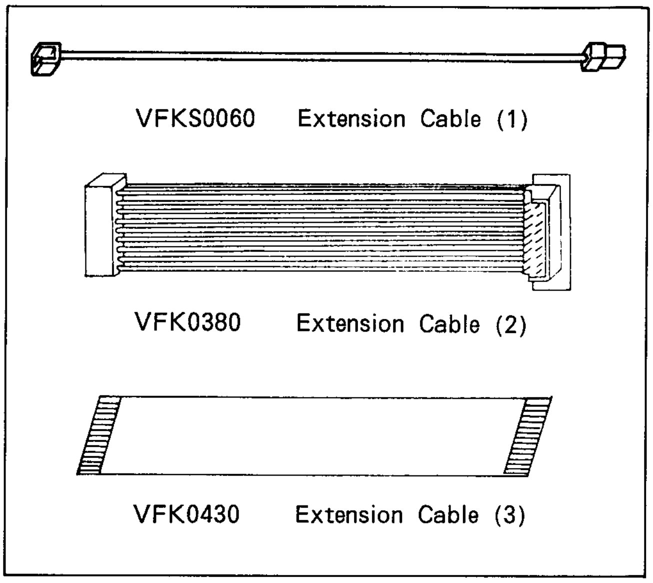

VFKS0060 Extension Cable (1)
VFK0380 Extension Cable (2)
VFK0430 Extension Cable (3)

Fig. C2

PREPARATION

1) Remove the Side Case (L) and Side Case (R) from the Unit.
   (Refer to the Disassembly Section.)
2) Mount the Camera Unit on the tripod using the Camera Unit Holder (VFK0382) and Camera Holder Arm (VFK0431).
3) Connect the Camera Unit, Video Recorder Unit, AC Adaptor, Camera Operation Unit and Colour Monitor TV as shown in Fig. C3.
4) Remove the Flexible Cable between FP301 and P3003
   And re–connect the Camera Extension Cable (3) (VFK0430) to these connectors.

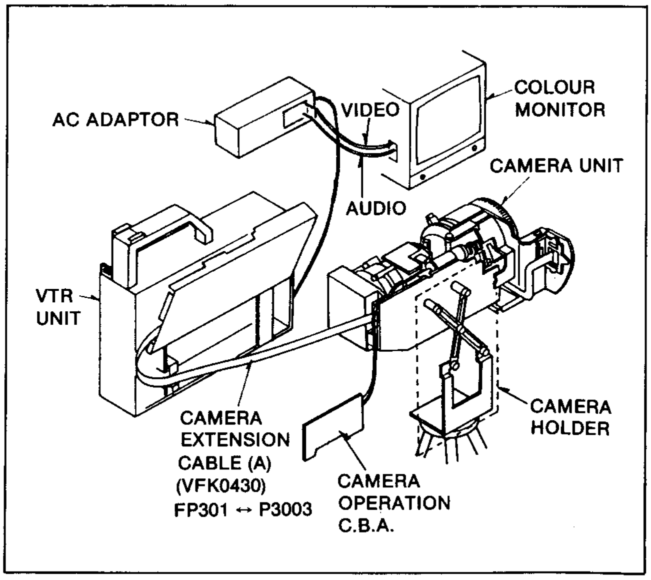

AC ADAPTOR
VIDEO
COLOUR MONITOR
CAMERA UNIT
AUDIO
VTR UNIT
CAMERA EXTENSION CABLE (A) (VFK0430) FP301 ↔ P3003
CAMERA OPERATION C.B.A.
CAMERA HOLDER

Fig. C3

Note:

1. Set the White Balance Switch to INDOOR position during adjustment procedures.
2. Service work for the Camera Unit must be performed in a dust-free location to maintain lens cleanliness.
3. To achieve the best adjustment results, warm up the camera before adjusting.
4. FOR TRIGGER (Refer to Fig. C4)
   To trigger the scope, solder jumper wires to the following pins that are used as test points. (H-Rate - Pin 12 of B302 and V-Rate - Pin 13 of B302). Remove the jumper wires after completing the adjustment Procedure(s).
5. If you use the reflection chart, ensure the colour temperature of the light source used is 3200 degrees K.

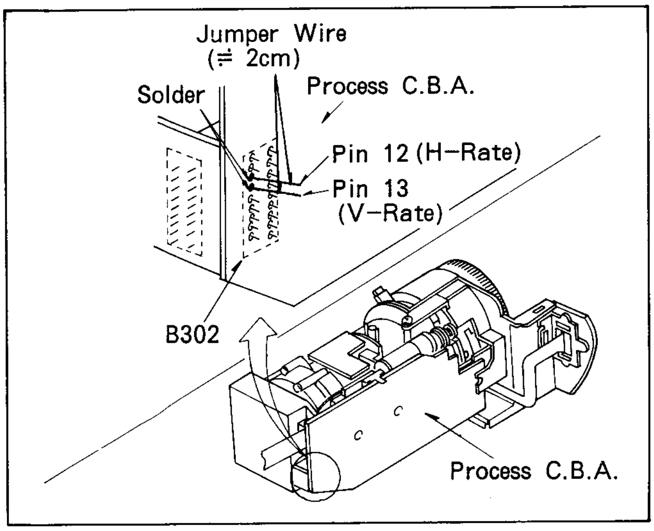
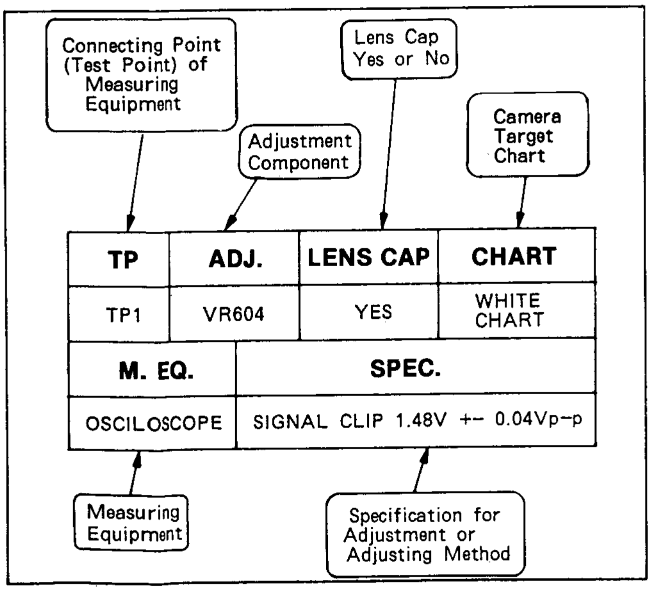

Jumper Wire
(≒ 2cm)
Solder
Process C.B.A.
Pin 12 (H-Rate)
Pin 13
(V-Rate)
B302
Process C.B.A.

Fig. C4

HOW TO READ THE ADJUSTMENT PROCEDURES


Connecting Point (Test Point) of Measuring Equipment
Lens Cap Yes or No
Camera Target Chart
Adjustment Component
Measuring Equipment
Specification for Adjustment or Adjusting Method

TP	ADJ.	LENS CAP	CHART
TP1	VR604	YES	WHITE CHART

M. EQ.	SPEC.
OSCILOSCOPE	SIGNAL CLIP 1.48V +- 0.04Vp-p

Fig. C5-1

CCD DRIVE SECTION

1. BACK FOCUS ADJUSTMENT
2. PLL FREQUENCY ADJUSTMENT
3. V-SUB ADJUSTMENT
4. CCD OUTPUT ADJUSTMENT

PROCESS SECTION

5. PEDESTAL LEVEL ADJUSTMENT
6. ALC ADJUSTMENT
7. AGC ADJUSTMENT
8. YH LEVEL ADJUSTMENT
9. WHITE BALANCE ADJUSTMENT
10. CARRIER BALANCE AND BLACK PEDESTAL ADJUSTMENT
11. AUTO WHITE BALANCE MODE ADJUSTMENT

11-1. AWB AUTO MODE (OUTDOOR) ADJUSTMENT

11-2. AWB AUTO MODE (OFFSET) ADJUSTMENT

12. COLOUR PHASE AND R-Y/B-Y GAIN ADJUSTMENT
13. HIGH INTENSITY SUPPRESS ADJUSTMENT
14. LOW LIGHT INDICATION ADJUSTMENT
15. AWT MODE ADJUSTMENT

15-1. AWT MODE (OFFSET) ADJUSTMENT

15-2. AWT MODE (GAIN) ADJUSTMENT

15-3. HIGH COLOUR TEMPERATURE ADJUSTMENT

AUTO FOCUS SECTION

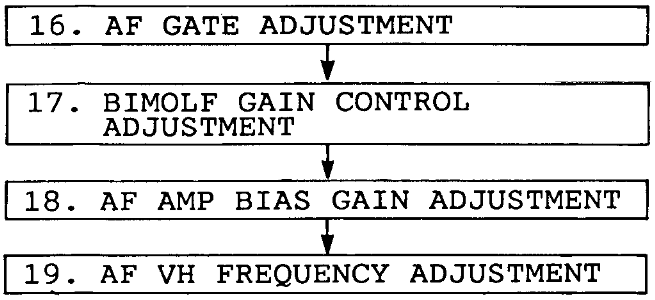

16. AF GATE ADJUSTMENT
17. BIMOLF GAIN CONTROL ADJUSTMENT
18. AF AMP BIAS GAIN ADJUSTMENT
19. AF VH FREQUENCY ADJUSTMENT

Fig. C5-2

CCD DRIVE SECTION

1. BACK FOCUS ADJUSTMENT

(1) Aim. the Camera at the Hunting Chart in 3m distance and zoom all the way in (Fully tele position).
(2) Focus the lens on the object.
(3) Adjust the relay lens adjustment point as shown in Fig. C6.

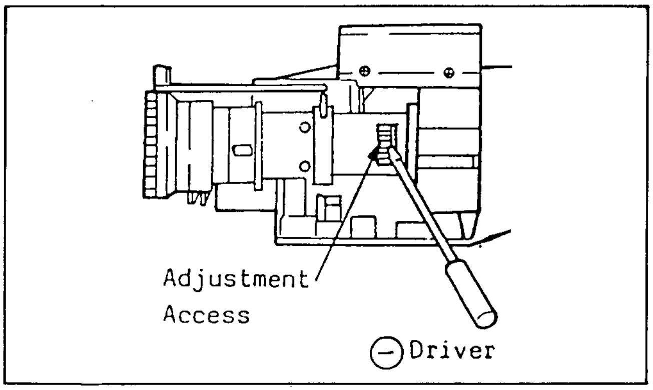

Adjustment Access
⊖Driver

Fig. C6

(4) Zoom all the way back and adjust the back focus pitch so that the sharpest focus is obtained.
(5) Repeat the procedure as follows, zoom in, focus, zoom out and adjust until the best focus is obtained over the entire Zoom range.

2. PLL FREQUENCY ADJUSTMENT

(1) Remove the Sensor Shield Case by removing its 4 Screws.

TP	ADJ.	LENS CAP	CHART
PIN 10 OF B201	C206		

M. EQ.	SPEC.
FREQUENCY COUNTER	9.65625MHz +– 10Hz

Note:
B201, C206 : CCD Drive C.B.A.

3. V–SUB ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR201	NO	HALOGEN LAMP

M. EQ.	SPEC.
MONITOR TV	NO BLOOMING

(1) Zoom allthe way in (Fully teie position) and aim the camera at the Halogen Lamp (3200 degrees K) as shown in Fig. C7–1.

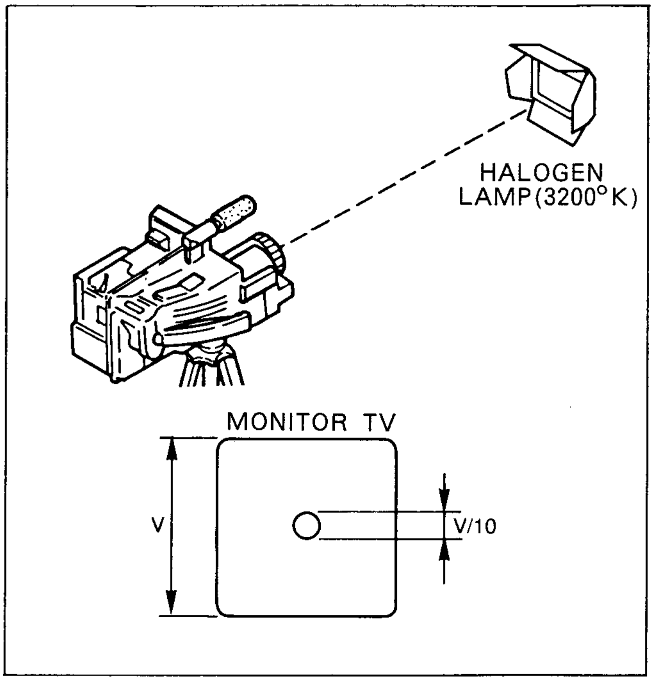

HALOGEN LAMP(3200°K)
MONITOR TV
V
V/10

Fig. C7–1

(2) Set the High Speed Shutter SW to "ON" portion.
(3) Connect a jumper wire between TP10 and TP11 to fully open the iris.
(4) Adjust the Blooming Control (VR201) so that the monitored picture does not contain the Blooming.
(5) High Speed Shutter "ON" and "OFF" both mode, confirm that the monitored picture does not contain the Blooming even if the camera moves as shown in Fig. C7–2.

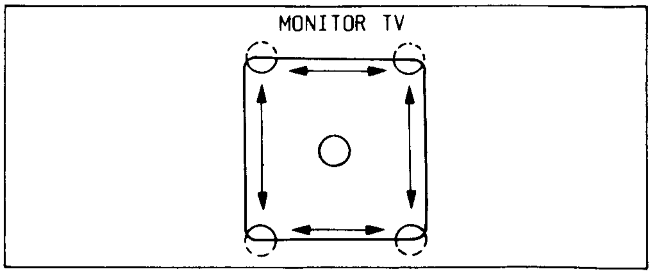


Fig. C7–2

4. CCD OUTPUT ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP201	VR202	NO	J CHART
M. EQ.	**SPEC.**		
OSCILLOSCOPE	200mV +- 10mV		

Note1:
TP201, VR202 : CCD Drive C.B.A.

Note2:
Prior to the above adjustment, adjust the iris control (VR301) so that the level at TP1 is 300+-10mV by observing waveform on the oscilloscope.

(1) Aim the camera at the J chart and focus the lens on the object.
(2) Connect the oscilloscope to TP201.
(3) Adjust VR202 so that the signal level is 200+-10mVp-p as shown in Fig. C8.

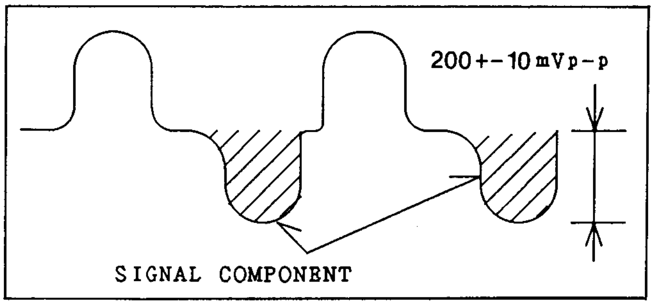


Fig. C8

PROCESS SECTION

5. PEDESTAL LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP2	VR305	YES	
M. EQ.	**SPEC.**		
OSCILLOSCOPE	SIGNAL LEVEL EQUALS THE BLANKING (BLNK) LEVEL.		

Note:
TP2, VR305 : Process C.B.A.

(1) Cover the Camera Lens with the Lens Cap.
(2) Connect the scope to TP2 and trigger with Pin 12 of B302 (H-Rate).
(3) Adjust the Pedestal Level Control (VR305) so that the signal level equals the BLK level as shown in Fig. C9.

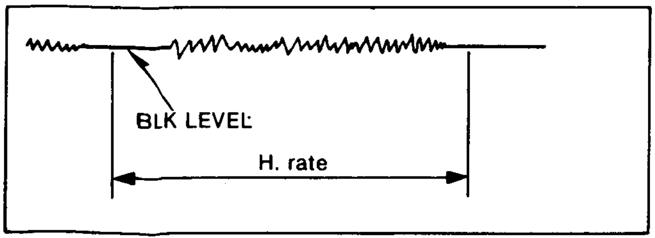


Fig. C9

6. ALC ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP1	VR301	NO	GRAY SCALE CHART
M. EQ.	**SPEC.**		
OSCILLOSCOPE	0.30V +- 0.02Vp-p		

Note:
TP1, VR301 : Process C.B.A.

(1) Aim the camera at the gray scale chart.
(2) Connect the scope to TP1 and trigger with Pin 12 of B302 (H-Rate).
(3) Adjust the Camera Unit to obtain 40usec as shown in Fig. C9.
(4) Adjust the Auto Iris Control (VR301) so that the signal level is 0.30V +- 0.02Vp-p.

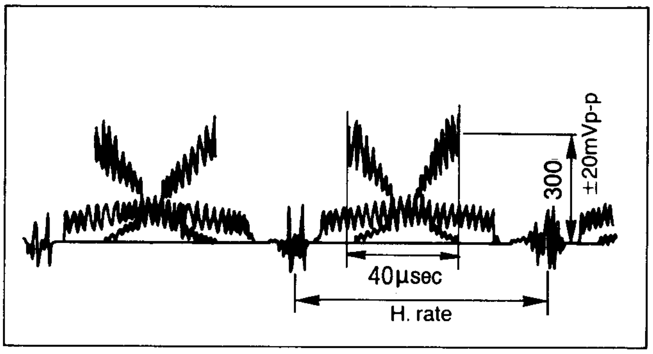


Fig. C10

7. AGC ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP2	VR304	NO	GRAY SCALE CHART
M. EQ.	**SPEC.**		
OSCILLOSCOPE	0.30V +- 0.02Vp-p		

Note:
TP2, VR304 : Process C.B.A.

(1) Aim the camera at the gray scale chart.
(2) Connect the scope to TP2 and trigger with Pin 12 of B302 (H-Rate).
(3) Adjust the Camera Unit to obtain 40usec as shown in Fig. C11.
(4) Adjust the AGC Control (VR304) so that the signal level is 0.30V +- 0.02Vp-p.

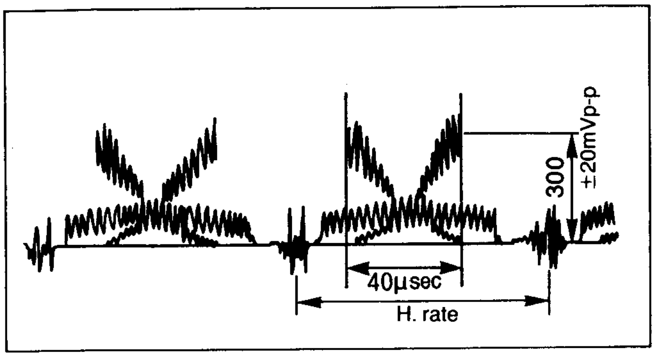


Fig. C11

8. YH LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
PIN 7 OF FP 301	VR302	NO	GRAY SCALE CHART

M. EQ.	SPEC.
OSCILLOSCOPE	B/A = 2.33 +– 0.2

Note:
VR302, FP301 : Process C.B.A.

(1) Aim the camera at the gray scale chart.
(2) Connect the scope to Pin 7 of FP301 (Refer to Fig. C13).
(4) Adjust the YH Level Control (VR302) so that the signal level "B/A" is 2.33 +– 0.2 as shown in Fig. C12.
(5) Disconnect the jumper wire between TP4, TP5 and TP6.

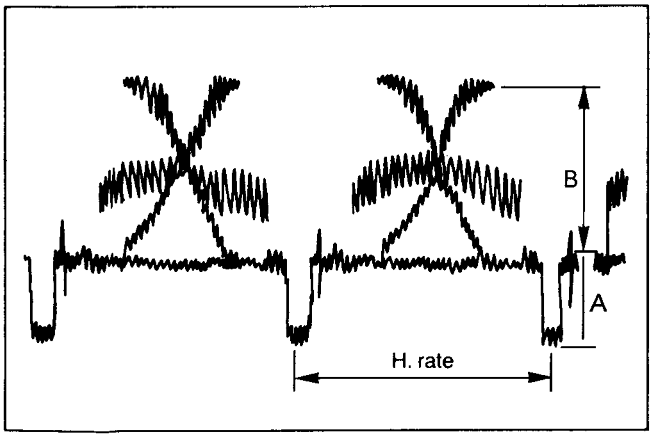


Fig. C12

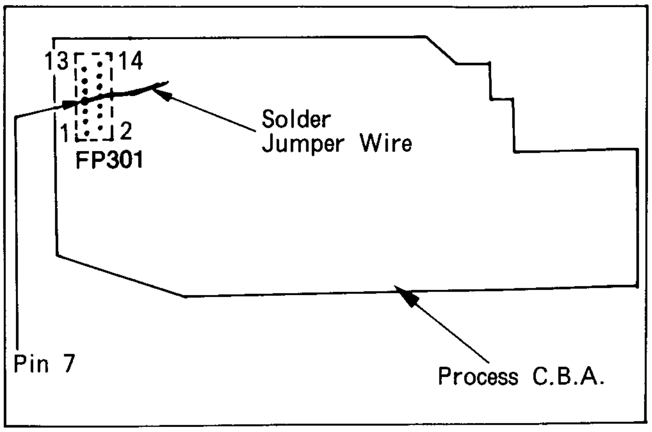


Fig. C13

9. INDOOR WHITE BALANCE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR322, VR323	NO	WHITE CHART

M. EQ.	SPEC.
VECTORSCOPE	CENTER OF VECTORSCOPE
OSCILLOSCOPE	WAVEFORM IS MINIMIZED

Note:
VR322, VR323 : Process C.B.A.

WITH VECTORSCOPE

(1) Set the white balance switch to "INDOOR" side.
(2) Connect a jumper wire between TP4, TP5 and TP6.
(3) Aim the camera at the White Chart.
(4) Supply the video signal to the vectorscope.
(5) Adjust the White Balance Controls (VR322 and VR323) so that the colour vectors are collected at the center of screen on the vectorscope as shown in Fig. C14.
(6) Remove the jumper wire between TP4, TP5 and TP6.

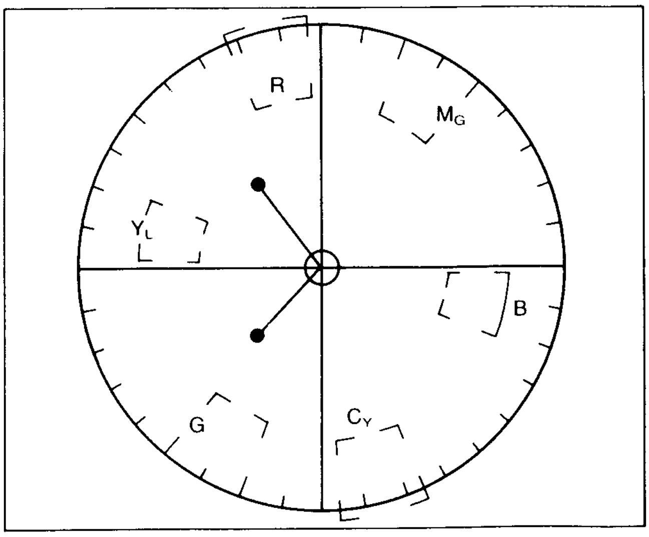


Fig. C14

WITH OSCILLOSCOPE

(1) Adjustment condition and procedure are same as using vectorscope

(2) Adjust VR322 and VR323 so that the waveform is minimized.

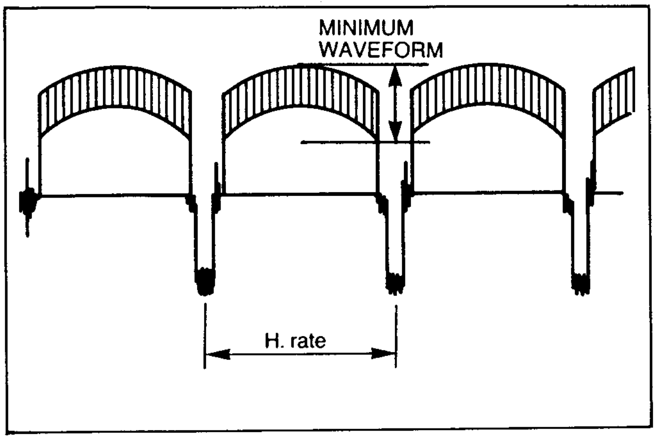


Fig. C15

10. CARRIER BALANCE AND BLACK PEDESTAL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR308 VR318, VR319	YES	

M. EQ.	SPEC.
VECTORSCOPE	CENTER OF VECTORSCOPE
OSCILLOSCOPE	WAVEFORM IS MINIMIZED

Note:
VR308, VR319, VR318 : Process C.B.A.

WHTH VECTORSCOPE

(1) Connect the jumper wire between TP4, TP5 and TP6.

(2) Cover the Camera Lens with the Lens Cap.

(3) Adjust the Black Pedestal Control (VR308) so that the colour vectors collect at the centre of screen on the vectorscope.

(4) Connect the jumper wire between TP6 and Pin 5 of P401

(5) Adjust the Carrier Balance Controls (VR318 and VR319) so that the colour vectors collect at the centre of screen on the vectorscope.

(6) Disconnect the jumper wire between TP4, TP5 TP6 and Pin 5 of P401 .

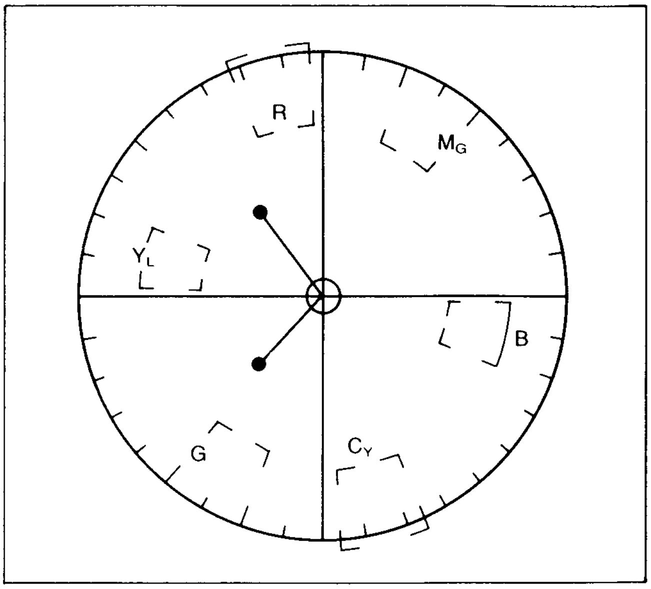


Fig. C16

WITH OSCILLOSCOPE

(1) Adjustment condition and procedure are same as using Vectorscope.

(2) Adjust VR318 and VR319 so that the waveform is minimized.

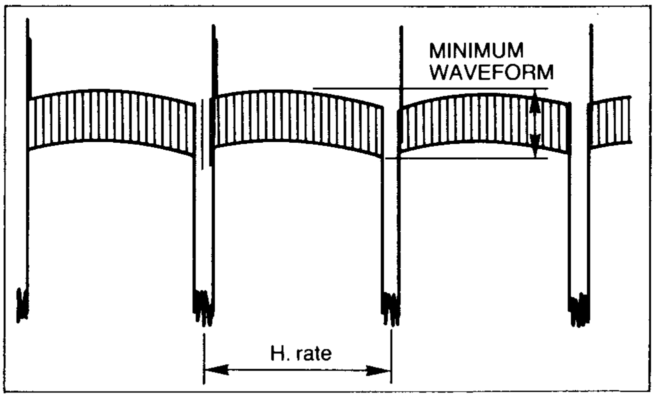


Fig. C17

11. AUTO WHITE BALANCE MODE ADJUSTMENT

Note:
1) Perform both sections of this procedure.

11–1. AWB AUTO MODE (OUTDOOR) ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR312 VR313	NO	WHITE CHART

M. EQ.	SPEC.
VECTORSCOPE	CENTER OF VECTORSCOPE
OSCILLOSCOPE	WAVEFORM IS MINIMIZED

Note:
VR312, VR313 : Process C.B.A.

WITH VECTORSCOPE

(1) Set the WHITE BALANCE Switch on the Camera Operation Unit to the "OUTDOOR".
(2) Connect a jumper between TP4, TP5 and TP6.
(3) Aim the camera at the white chart using a 3200 degrees K Halogen lamp.
(4) Supply the video signal to the vectorscope.
(5) Attach the colour temperature conversion filters (VFK0374 and VFK0375) which converts 3200 degrees Kelvin to 5800 degrees Kelvin in front of the Lens (Refer to Note 1 of item 15–3).
(6) If the color temperature conversion filter is not available, use a day light source (Refer to Note 2 of item 15–3).
(7) Adjust the W.B. (B–Y) OUTDOOR GAIN and W.B. (R–Y) OUTDOOR GAIN Controls (VR312 and VR313) so that the colour vectors move to the centre of screen on the vectorscope. (Refer to Fig. C18.)
(8) Remove the colour temperature conversion filter with the fixture from the lens.

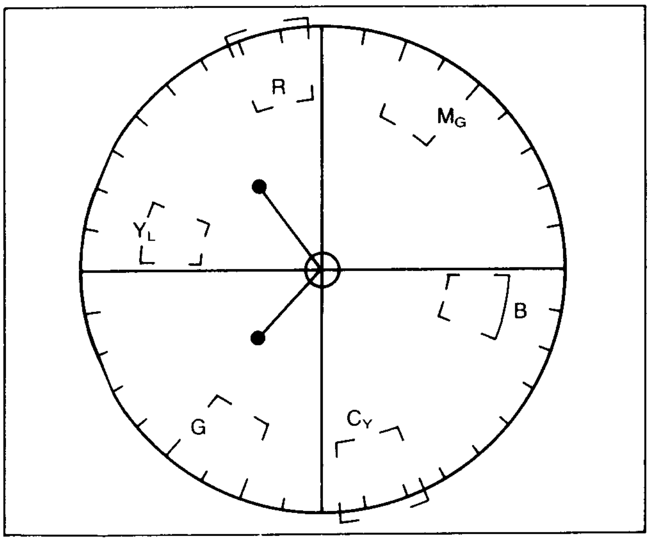


Fig. C18

WITH OSCILLOSCOPE

(1) Adjustment condition and procedure are same as using vectorscope.
(2) Adjust VR312 and VR313 so that the waveform is minimized.

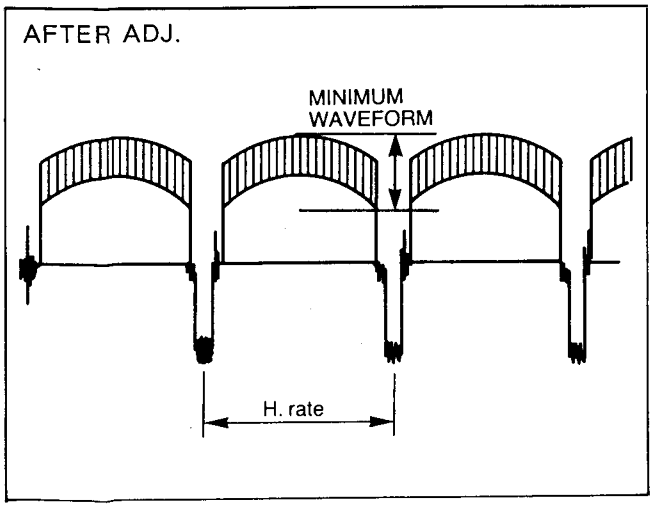


Fig. C19

11–2. AWB MOOE (OFFSET) ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR314, VR315	NO	GRAY SCALE CHART
M. EQ.	**SPEC.**		
VECTORSCOPE	CENTER OF VECTORSCOPE		
OSCILLOSCOPE	WAVEFORM IS MINIMIZED		

Note:
VR314, VR315 : Process C.B.A.

WITH VECTORSCOPE

(1) Set the WHITE BALANCE Switch on the Camera Operation Unit to the "INDOOR".
(2) Remove the jumper wire between TP4, TP5 and TP6.
(3) Adjust the W.B. (R–Y OFFSET) and W.B. (B–Y OFFSET) Controls (VR314 and VR315) so that the colour vectors move to the centre of screen on the vectorscope. (Refer to Fig. C20.)

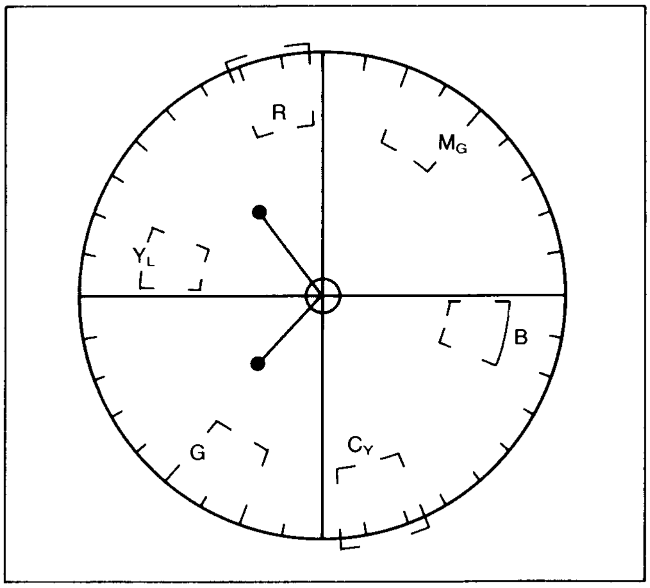


Fig. C20

WITH OSCILLOSCOPE

(1) Adjustment condition and procedure are same as using vectorscope.
(2) Adjust VR314 and VR315 so that the waveform is minimized.

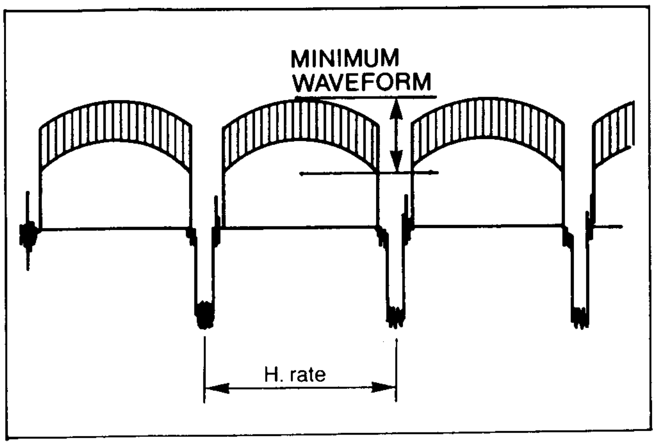


Fig. C21

12. COLOR PHASE AND R−Y/B−Y GAIN Y ADJUSTMENT USTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR316, VR317 VR303, VR324	NO	COLOUR CHIP CHART

M. EQ.	SPEC.
VECTORSCOPE	FIG. C22

Note:
VR316, VR317, VR303, VR324 : Process C.B.A.

(1) Connect a jumper wire between TP4, TP5 and TP6.
(2) Aim the camera at a colour chip chart.
(3) Supply the video signal to the vectorscope.
(4) Adjust the Colour Phase Control (VR303 and VR324), the R−Y Gain Control (VR316) and the B−Y Gain Control (VR317) so that the vector of each colour is as shown in Fig. C22.
(5) Remove the jumper wire between TP4, TP5 and TP6.

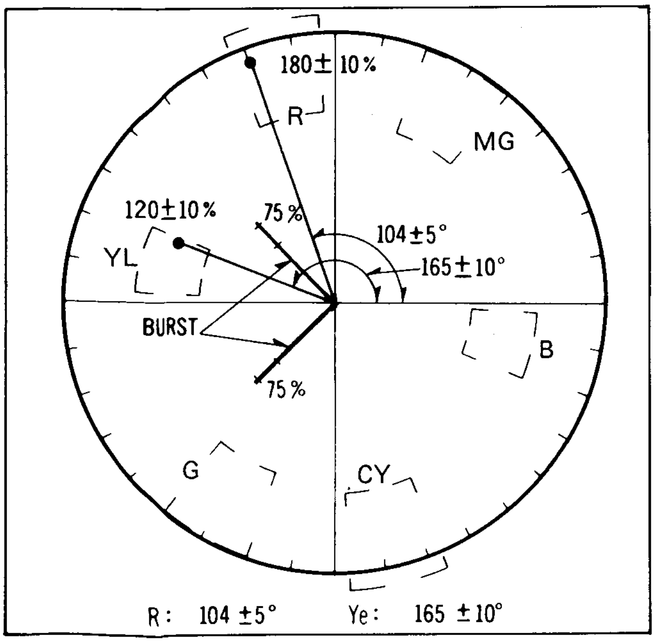


Fig. C22

13. HIGH INTENSITY SUPPRESS ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR306	NO	GRAY SCALE CHART

M. EQ.	SPEC.
TV MONITOR	NO COLOUR INTERFERENCE

Note:
VR306 : Process C.B.A.

(1) Aim the camera at the gray scale chart and focus the lens object.
(2) Press the back light button and keep as it is.
(3) Adjust VR306 so that the monitored gray scale chart does not have colour interfarence.

14. LOW LIGHT INDICATION ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP12	VR107	NO	WHITE CHART

M. EQ.	SPEC.
OSCILLOSCOPE	REFER TO FIG. C23.

Note:
TP12, VR107 : Process C.B.A.

(1) Connect the oscilloscope to TP12 and set it in DC mode.
(2) Shade surface of AWT Sensor with hand and adjust VR107 so that DC level at TP12 is changed from "LOW" to "HIGH"

Note:
For more acurate adjustment;
When the illumination of the surface of AWT Sensor is 6lux,the level must be "LOW".
When the illumination of the surface of AWT Sensor is 3lux,the level must be "HIGH".

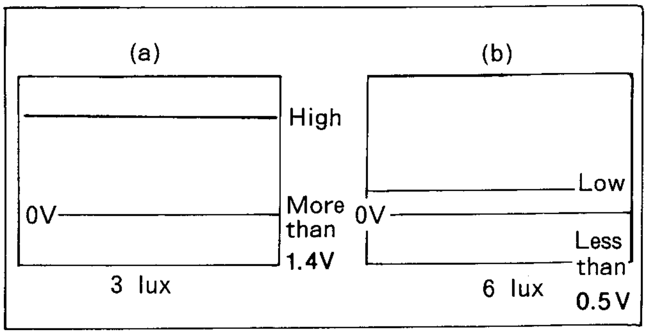


Fig. C23

15. AWT MODE ADJUSTMENT

Note:
1) Perform all three sections of this procedure.
2) Set the WHITE BALANCE Switch on the CAMERA OPERATION UNIT to the "AUTO".

15–1. AWT MODE (OFFSET) ADJUSTMENT

TP	**ADJ.**	**LENS CAP**	**CHART**
VIDEO OUTPUT	VR105, VR106	NO	WHITE CHART

M. EQ.	**SPEC.**
VECTORSCOPE	CENTER OF VECTORSCOPE
OSCILLOSCOPE	WAVEFORM IS MINIMIZED

Note:
VR105, VR106 : Process C.B.A.

WITH VECTORSCOPE
(1) Aim the camera at the white chart.
(2) Supply the video signal to the vectorscope.
(3) Rotate VR101 and VR102 fully clockwise as shown in Fig. C24

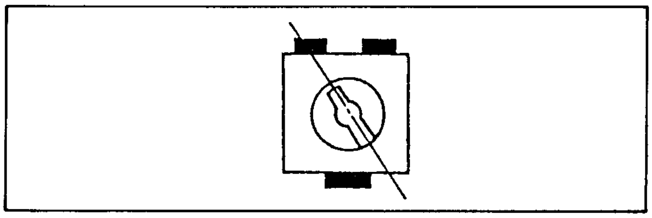


Fig. C24

(4) Adjust the AWT (R–Y OFFSET) and AWT (B–Y OFFSET) controls (VR105 and VR106) so that the colour vectors move to the centre of screen on the vectorscope. (Refer to Fig. C25.)

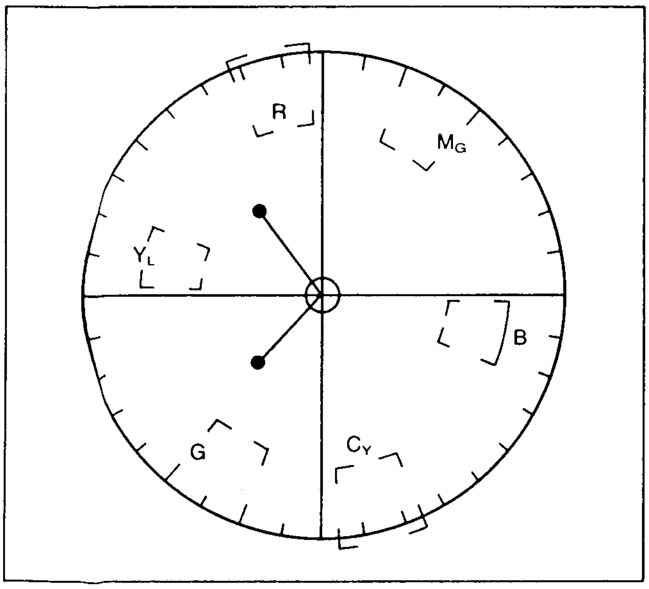


Fig. C25

WITH OSCILLOSCOPE
(1) Adjustment condition and procedure are same as using vectorscope.
(2) Adjust VR105 and VR106 so that the waveform is minimized.

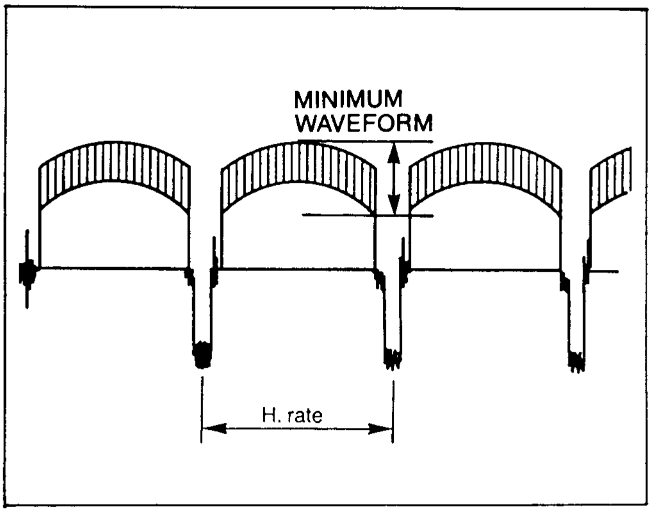


Fig. C26

15–2. AWT MODE (GAIN) ADJUSTMENT

TP	**ADJ.**	**LENS CAP**	**CHART**
VIDEO OUTPUT	VR103, VR104, VR105, VR106	NO	WHITE CHART

M. EQ.	**SPEC.**
VECTORSCOPE	CENTER OF VECTORSCOPE
OSCILLOSCOPE	WAVEFORM IS MINIMIZED

Note:
VR103, VR104, VR105, VR106 : Process C.B.A.

WITH VECTORSCOPE
(1) Aim the camera at the white chart using a 3200 degrees K Halogen lamp.
(2) Supply the video signal to the vectorscope.
(3) Attach the color temperature conversion filter (VFK0375) which converts 3200 degrees Kelvin to 3400 degrees Kelvin in front of the Lens and AWT Sensor.(Refer to Note 1 of item. 15–3)
(4) If the colour temperature conversion filter is not available, use a day light source. (Refer to Note 2 of item. 15–3)
(5) Adjust the AWT (R–Y GAIN) and AWT (B–Y GAIN) Controls (VR103 and VR104) so that the color vectors move to the centre of screen on the vectorscope. (Refer to Fig. C27.)

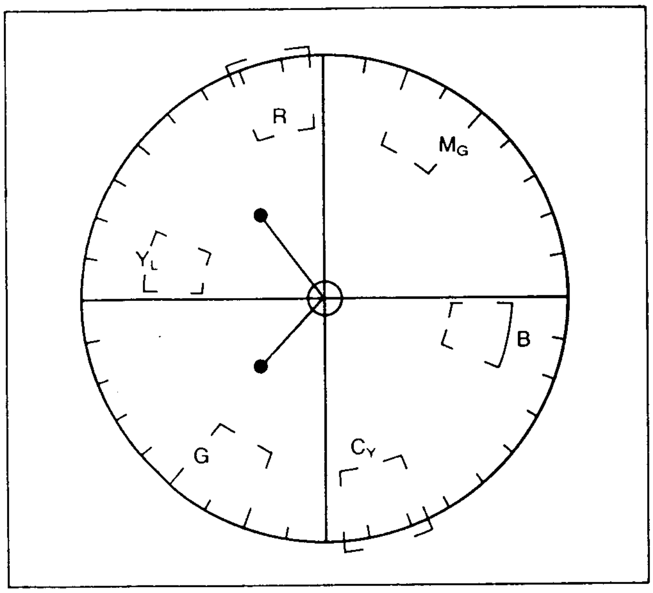


Fig. C27

(6) Next, remove the colour temperature conversion filter with the fixture from the Lens.

(7) If the colour vectors do not collect at the centre, adjust the AWT (R−Y OFFSET) and AWT (B−Y OFFSET) Controls (VR105 and VR106) so that the colour vectors move to the centre of screen on the vectorscope.

(8) Repeat steps (1)−(7) so that the colour vectors collect at the center of screen on the vectorscope.

WITH OSCILLOSCOPE

(1) Adjustment condition and procedure are same as using vectorscope.

(2) Adjust VR103, VR104, VR105 and VR106 so that the waveform is minimized.

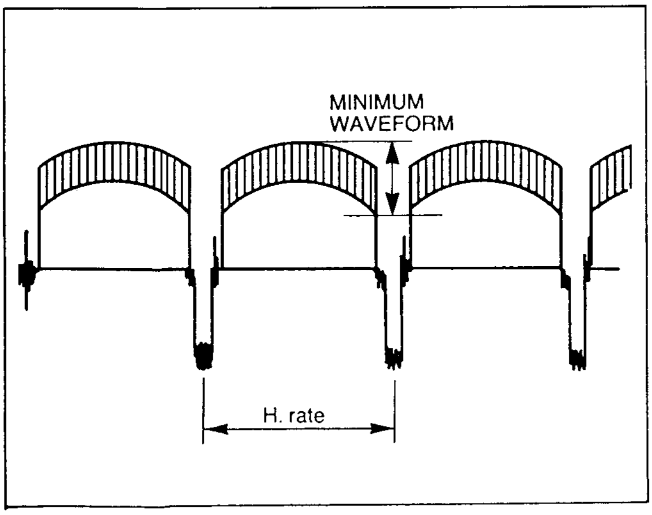


Fig. C28

15−3. HIGH COLOR TEMPERATURE CLIP ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR101, VR102	NO	WHITE CHART

M. EQ.	SPEC.
VECTORSCOPE	CENTER OF VECTORSCOPE
OSCILLOSCOPE	WAVEFORM IS MINIMIZED

Note:
VR101, VR102 : Process C.B.A.
When this adjustment is performed, previous items 15−1 and 15−2 must be completed.

WITH VECTORSCOPE

(1) Aim the camera at the white chart using a 3200 degrees K Halogen lamp .

(2) Supply the video signal to the vectorscope.

(3) Attach the colour temperature conversion filters (VFK0374 and VFK0375) which convert 3200 degrees Kelvin to 5800 degrees Kelvin in front of the Lens and AWT Sensor. (Refer to Note 1 of item. 15−3).

(4) If the colour temperature conversion filters are not available, use a day light source. (Rfer to Note 2 of item. 15−3)

(5) Adjust the Colour Temperature Clip Controls (VR101 and VR102) so that the colour vectors collect at the contre of screen on the vectorscope.

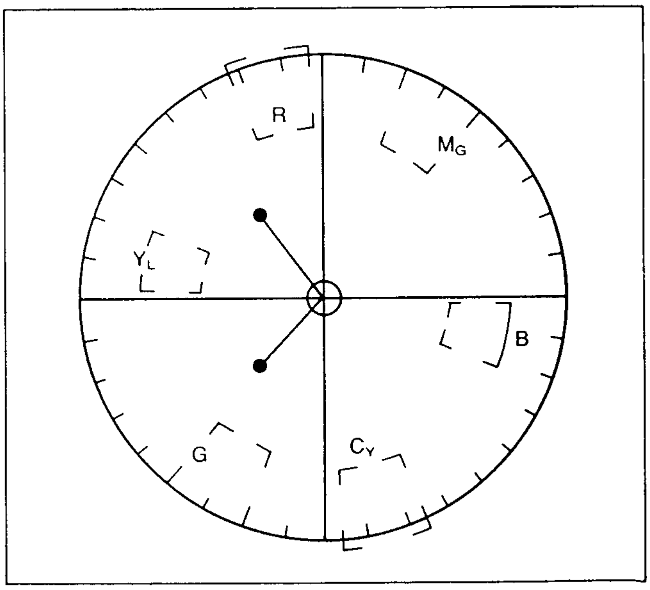


Fig. C29

WITH OSCILLOSCOPE

(1) Adjustment condition and procedure are same as using vectorscope.

(2) Adjust VR101 and VR102 so that the waveform is minimized.

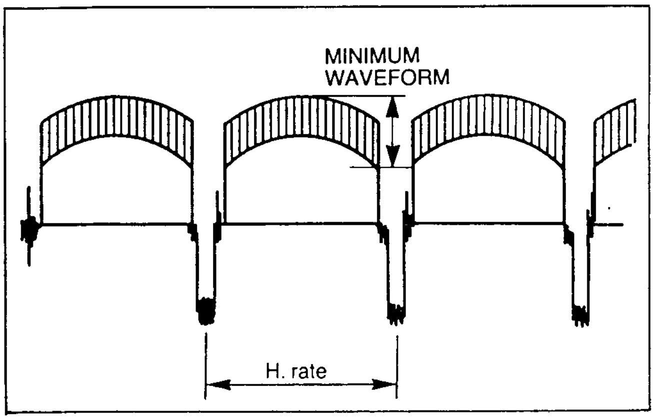

MINIMUM
WAVEFORM
H. rate

Fig. 30

Note 1:
Attach the fixture to the Lens, then attach the colour temperature conversion filter to fixture. It can be procured at a Camera Store. Please construct the fixture using the sheet attached to inside cover page at the back of the Service Manual. (Refer to Fig. C31.)

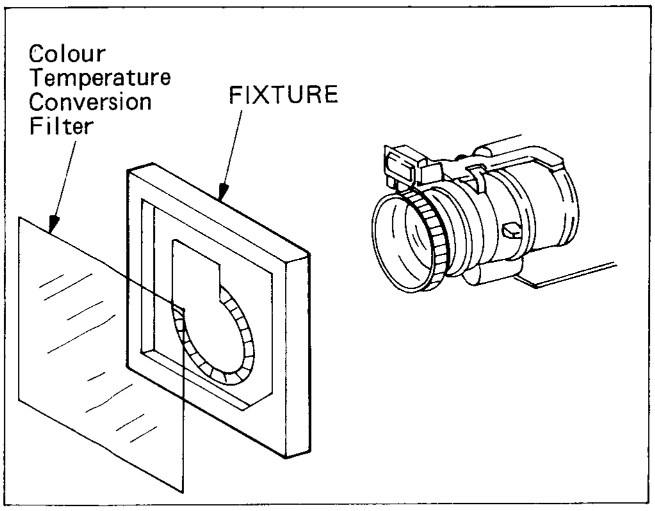

Colour
Temperature
Conversion
Filter
FIXTURE

Fig. C31

Note 2:
(1) Aim the camera at a sunny outdoor source (window, etc.).
(2) Incoming light must be from an outdoor source only; source and illumination on the sensor must be more than 500Lx, and colour temperature must be within 5000 degrees –6000 degrees Kelvin.
(Refer to Fig. C26.)

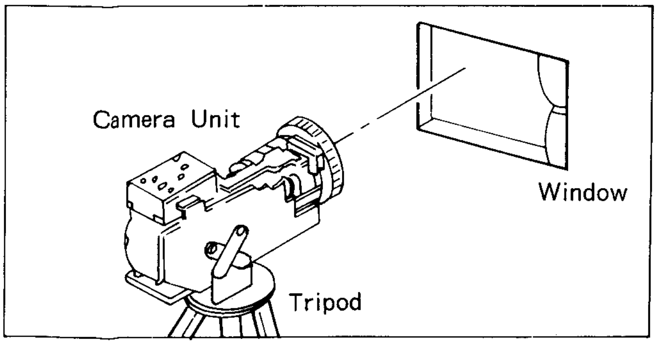

Camera Unit
Window
Tripod

Fig. C32

AUTO FOCUS SECTION

PREPARATION

The following adjustments are for the Auto Focus Unit.

(1) Camera zoom is positioned at the end of TELE side.

16. AF GATE ADJUSTMENT

TP	ADJ.	IRIS CAP	CHART
TP602, TP603	C656	NO	

M. EQ.	SPEC.
OSCILLOSCOPE	1T = 9.6 +– 0.4u–sec.

Note:
TP602, TP603, C656 : AF C.B.A.

(1) Set the AF Gate Control (C656) as shown in Fig. C33

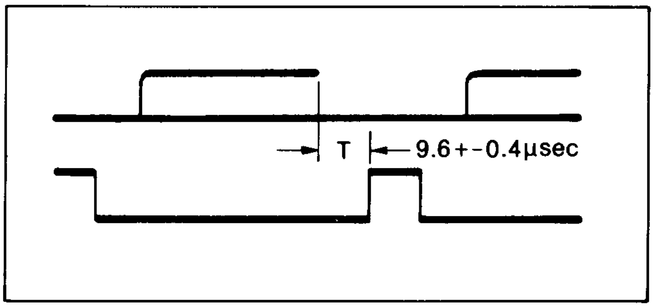


Fig. C33

17. BIMOLF GAIN CONTROL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP604	VR603	YES	

M. EQ.	SPEC.
OSCILLOSCOPE	A = 16V +– 0.5Vp–p

Note:
TP604, VR603 : AF C.B.A.

(1) Set the Focus Switch to the MANUAL position.
(2) Cover the camera lens with the lens cap.
(3) Connect the scope to the TP604.
(4) Adjust the Bimolf Gain Control (VR603) so that the signal level (A) is 16V +– 0.5Vp–p.

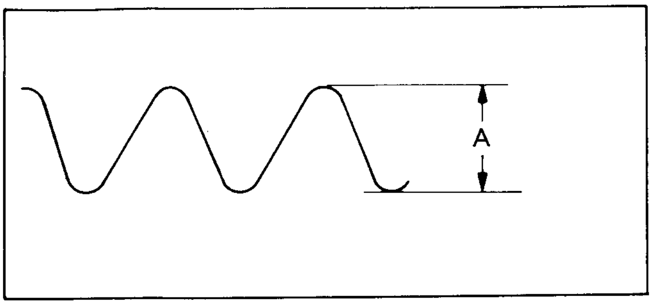


Fig. C34

18. AF AMP BIAS AND GAIN ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP3, TP9, TP10, TP11	VR601, VR602	NO	GRAY SCALE CHART

M. EQ.	SPEC.
D.V.M.	----------------

Note:
TP3, TP9, TP10, TP11 : Process C.B.A.
VR601, VR602 : AF C.B.A.

(1) Connect a jumper wire between TP3 and TP10.
(2) Adjust the AF AMP BIAS Control (VR601) so that the voltage level at TP9 is 1.74V +– 0.02V.
(3) Disconnect the jumper wire between TP3 and TP10.
(4) Next, connect a jumper wire between TP10 and TP11.
(5) Adjust the AF AMP Gain Control (VR602) so that the voltage Level of TP9 is 3.72V +– 0.05V.
(6) Disconnect the jumper wire between TP10 and TP11.
(7) Next, confirm the voltage level at TP9 by connecting a jumper wire between TP3 and TP10.
(8) If the voltage level at TP9 is not 1.74V +– 0.02V, repeat steps (1) – (6).

19. AF VH FREQUENCY ADJUSTMENT

TP	ADJ.	IRIS CAP	CHART
TP605	C621	NO	WHITE/GRAY CHART

M. EQ.	SPEC.
OSCILOSCOPE	A = 1.0 +– 0.04Vp–p

Note:
TP605, TP611, C621 : AF C.B.A.

Zoom : TELE Side
Focus: AUTO

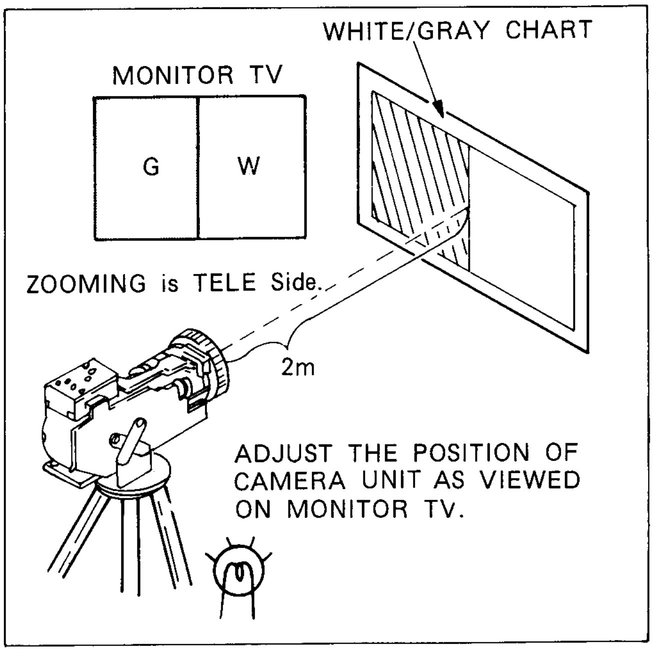


Fig. C35

(1) Aim the Camera at the White/Gray Chart attached to inside of this Service Manual.
(2) Confirm that the voltage at TP611 is 2.2V +– 0.1V.
(3) If the Voltage at TP611 is not 2.2V +– 0.1V, adjust the light source so that the voltage at TP611 is 2.2V +– 0.1V.
(4) Adjust the C621 so that the "A" level at TP605 is 1.0 +– 0.05Vp–p.

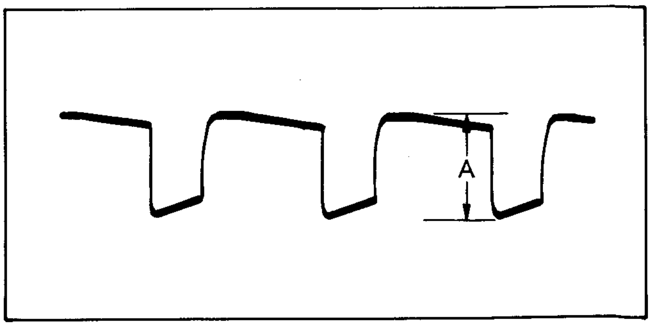


Fig. C36

2-4-2. ELECTRICAL ADJUSTMENT FOR E.V.F. SECTION

PREPARATION

The following adjustments are for the Electronic Viewfinder.

(1) Connect the Viewfinder plug to the E.V.F. connector on the unit.
(2) The camera circuit must be completely aligned before viewfinder adjustments are made.

1. H–OSC ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
Pin2 of P701	VR702	NO	BALL CHART

M. EQ.	SPEC.
FREQUENCY COUNTER	15.6KHz +– 0.1KHz

Note:
P701, VR702 : E.V.F. C.B.A.

(1) Connect the scope to Pin2 of P701, use DC
(2) Adjust the H–OSC (VR702) so that the frequency is 15.8 +– 0.1 KHz.

2. CENTERING ADJUSTMENT

(1) Aim the camera at the registration chart.
(2) Adjust the Deflection Yoke Centering Magnets by turning them so that the picture on monitor TV is centered.

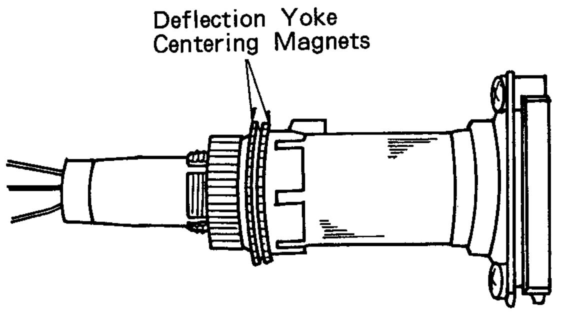


Fig. C39

3. FOCUS ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR704	NO	BALL CHART

M. EQ.	SPEC.
VIEWFINDER	BEST RESOLUTIONON

Note:
VR704 : E.V.F. C.B.A.

(1) Aim the camera at the Ball chart.
(2) Adjust the focus control (VR704) for best resolution in the viewfinder.

4. V.SIZE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR701	NO	GRAY SCALE CHART

M. EQ.	SPEC.
VIEWFINDER	VERTICAL SIZE IS FIXED.

Note:
VR701 : E.V.F. C.B.A.

(1) Aim the camera at the gray scale chart.
(2) Adjust the Vertical Size (VR701) so the Vertical Size is correct and the picture does not roll as shown in Fig. C40.

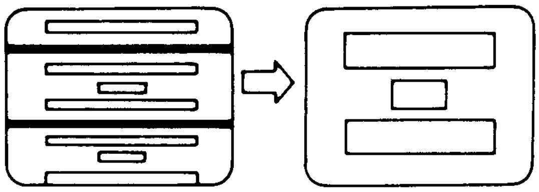


Fig. C40

5. BRIGHTNESS ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR705	NO	GRAY SCALE CHART

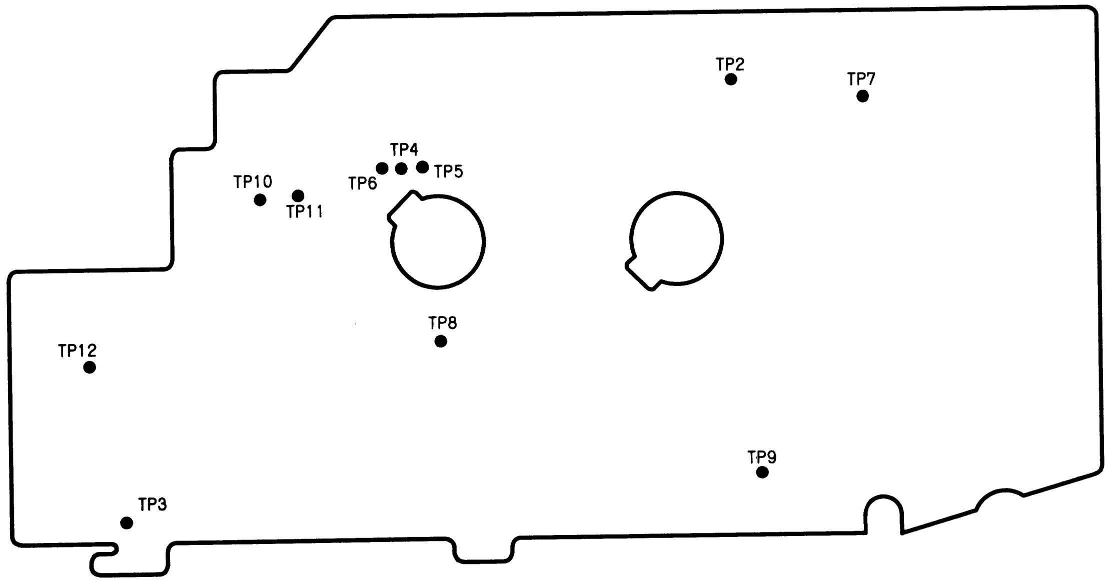
M. EQ.	SPEC.
VIEWFINDER	NATURAL GRADATION

Note:
VR705 : E.V.F. C.B.A.

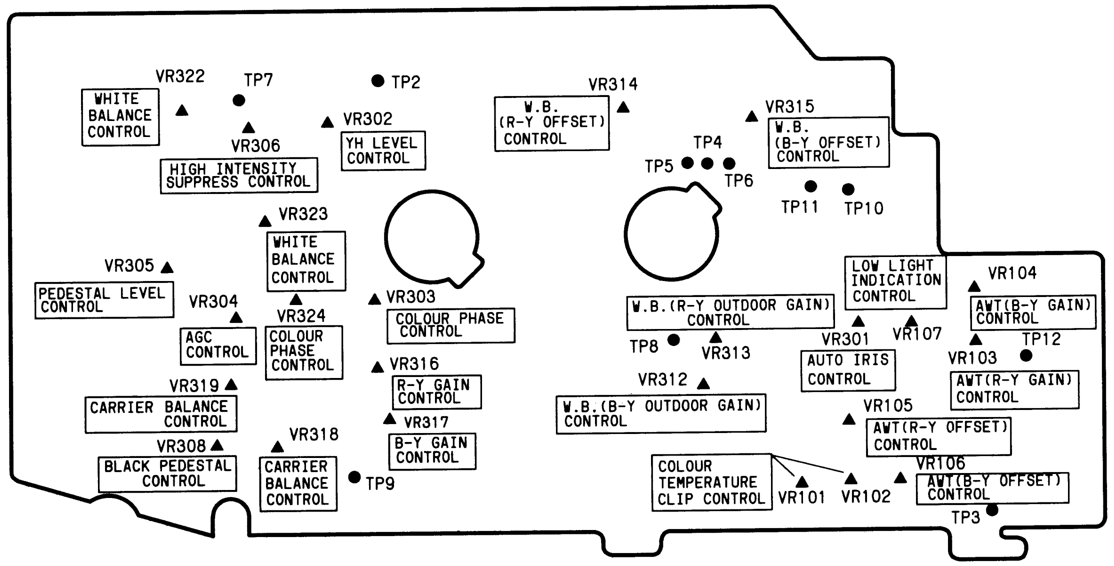
(1) Aim the camera at the gray scale shart.
(2) Adjust the Brightness Control (VR705) so that the black and white Bars in the E.V.F. screen are the same as they are in the monitor TV screen.

LOCATION OF TEST POINTS & CONTROLS —Camera Section—

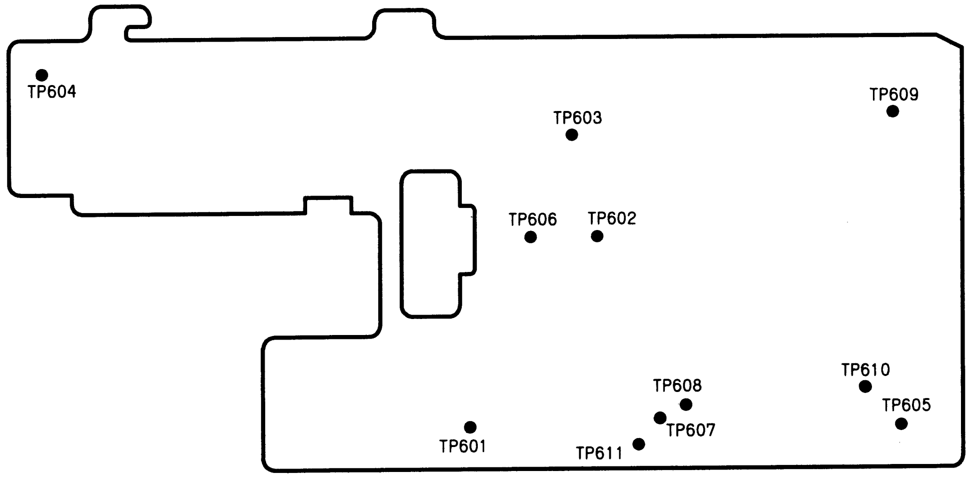
PROCESS C.B.A. (COMPONENT SIDE)


TP2
TP7
TP4
TP10
TP6
TP5
TP11
TP8
TP12
TP9
TP3

PROCESS C.B.A. (FOIL SIDE)

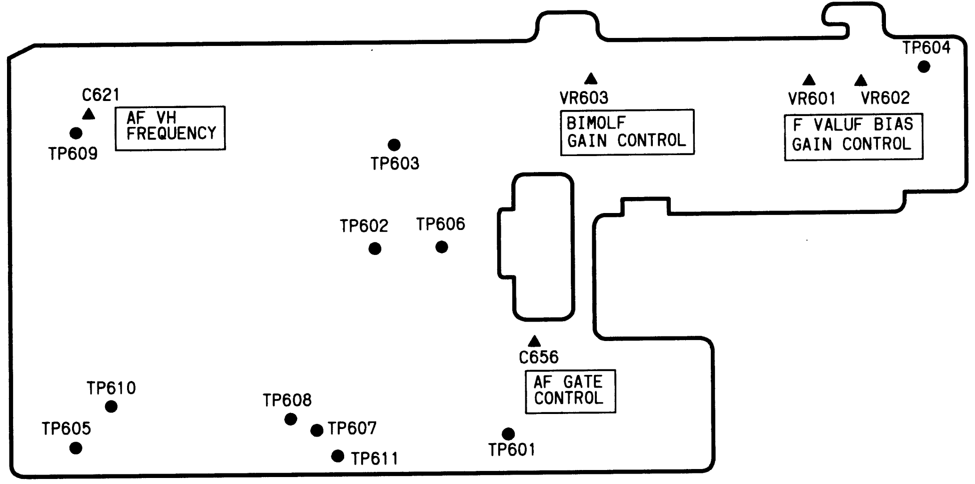

VR322
TP7
TP2
VR314
WHITE BALANCE CONTROL
VR302
W.B. (R-Y OFFSET) CONTROL
VR315
VR306
YH LEVEL CONTROL
TP4
W.B. (B-Y OFFSET) CONTROL
HIGH INTENSITY SUPPRESS CONTROL
TP5
TP6
TP11
TP10
VR323
WHITE BALANCE CONTROL
VR305
LOW LIGHT INDICATION CONTROL
VR104
PEDESTAL LEVEL CONTROL
VR304
VR303
W.B.(R-Y OUTDOOR GAIN) CONTROL
AWT(B-Y GAIN) CONTROL
VR324
COLOUR PHASE CONTROL
VR301
VR107
AGC CONTROL
COLOUR PHASE CONTROL
TP8
VR313
TP12
VR316
AUTO IRIS CONTROL
VR103
VR319
R-Y GAIN CONTROL
VR312
AWT(R-Y GAIN) CONTROL
CARRIER BALANCE CONTROL
VR317
W.B.(B-Y OUTDOOR GAIN) CONTROL
VR105
VR318
B-Y GAIN CONTROL
AWT(R-Y OFFSET) CONTROL
VR308
VR106
BLACK PEDESTAL CONTROL
CARRIER BALANCE CONTROL
TP9
COLOUR TEMPERATURE CLIP CONTROL
VR101
VR102
AWT(B-Y OFFSET) CONTROL
TP3

AUTO FOCUS C.B.A.


TP604
TP609
TP603
TP606
TP602
TP608
TP610
TP605
TP607
TP601
TP611

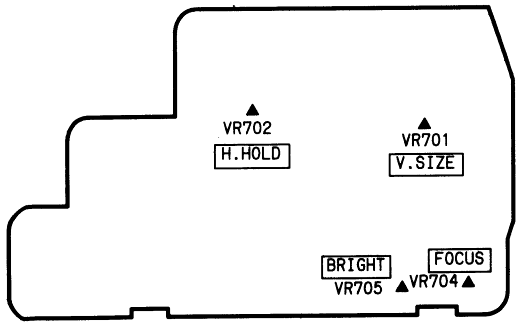
(COMPONENU SIDF)

AUTO FOCUS C.B.A.

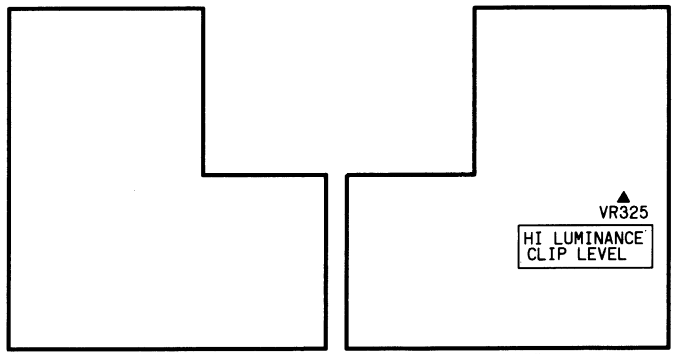

TP604
C621
VR603
VR601
VR602
AF VH FREQUENCY
BIMOLF GAIN CONTROL
F VALUF BIAS GAIN CONTROL
TP609
TP603
TP602
TP606
C656
AF GATE CONTROL
TP610
TP608
TP605
TP607
TP611
TP601

(FOIL SIDE)

E.V.F. C.B.A.

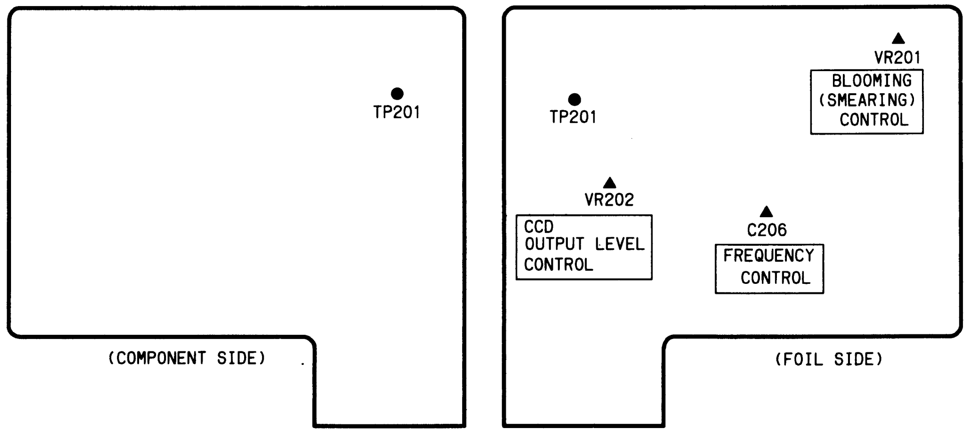

VR702
VR701
H.HOLD
V.SIZE
FOCUS
BRIGHT
VR705
VR704

SUB PROCESS C.B.A.


VR325
HI LUMINANCE CLIP LEVEL

(COMPONENT SIDE) (FOIL SIDE)

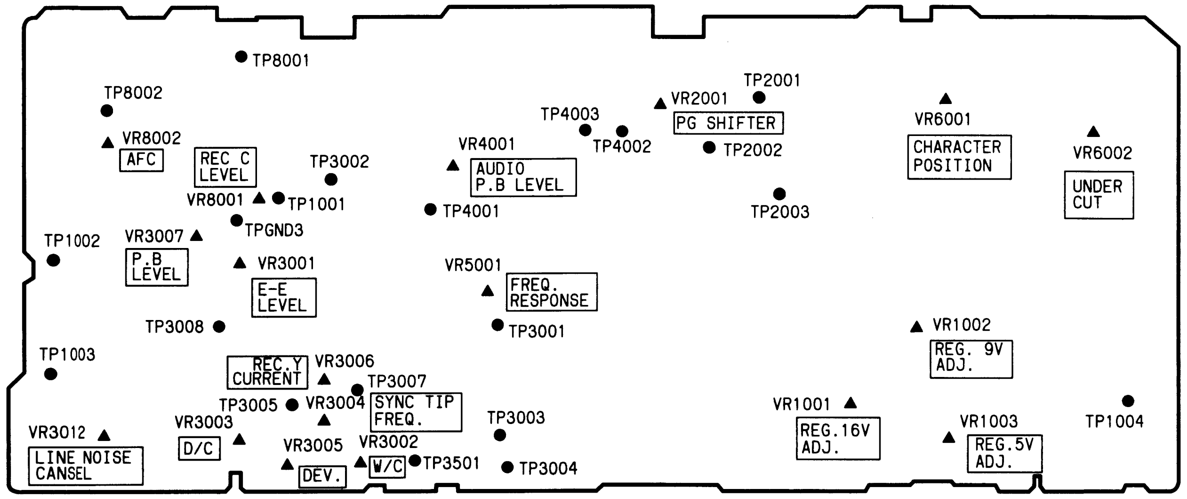
SENSOR C.B.A.


TP201
VR201
BLOOMING (SMEARING) CONTROL
TP201
VR202
C206
CCD OUTPUT LEVEL CONTROL
FREQUENCY CONTROL

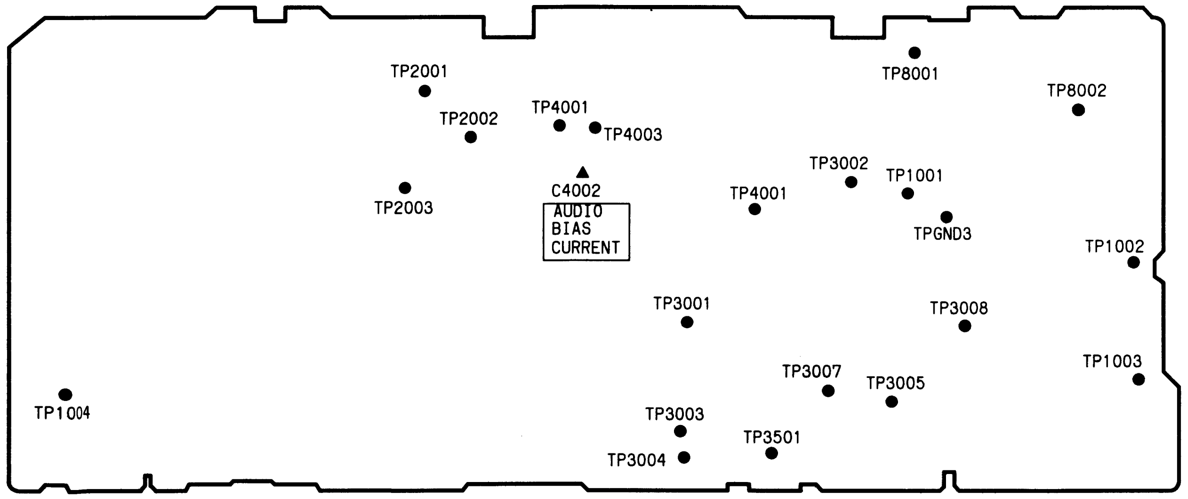
(COMPONENT SIDE) (FOIL SIDE)

LOCATION OF TEST POINTS & CONTROLS — VTR Section —

MAIN C.B.A. (FOIL SIDE)


TP8001
TP8002
VR8002
AFC
REC C
LEVEL
TP3002
VR8001
TP1001
TPGND3
TP1002
VR3007
P.B
LEVEL
VR3001
E-E
LEVEL
TP3008
TP1003
REC.Y
CURRENT
VR3006
TP3007
TP3005
VR3004
SYNC TIP
FREQ.
VR3003
VR3012
LINE NOISE
CANSEL
D/C
VR3005
DEV.
VR3002
W/C
TP3501
TP3003
TP3004
VR4001
AUDIO
P.B LEVEL
TP4001
TP4003
TP4002
VR2001
PG SHIFTER
TP2001
TP2002
TP2003
VR5001
FREQ.
RESPONSE
TP3001
VR6001
CHARACTER
POSITION
VR6002
UNDER
CUT
VR1002
REG. 9V
ADJ.
VR1001
REG.16V
ADJ.
VR1003
REG.5V
ADJ.
TP1004

MAIN C.B.A. (COMPONENT SIDE)


TP2001
TP2002
TP4001
TP4003
TP8001
TP8002
TP2003
C4002
AUDIO
BIAS
CURRENT
TP4001
TP3002
TP1001
TPGND3
TP1002
TP3001
TP3008
TP1003
TP3007
TP3005
TP1004
TP3003
TP3501
TP3004

2-4-3. ELECTRICAL ADJUSTMENT FOR VTR SECTION

TEST EQUIPMENT AND TOOL

The following equipment is required for adjustment of the VTR section of NV-M7.

1) VTVM (Vacuum Tube Volt Meter)
   DVM (Digital Volt Meter)
   Voltage Range : 0.01～50V
2) Dual Trace Oscilloscope
   Voltage Range : 0.06～50V/div
   Frequency Range : 0～10MHz
   Probe : 10:1 ro 1:1
3) Frequency counter
   Frequency Range : 0～10MHz
4) Signal Generator (Sinewave)
   Frequency Range :0～10MHz
5) Video Sweep Generator
   Frequency Range : 0～10MHz
6) Colour Monitor TV
7) Plastic Tip Driver
8) VHS Alignment Tape

PREPARATION I (For EO/EN/A/EA/EM/AM models)

(1) Remove the casing panels
    (Refer to the desassemble section)
(2) Supply the video signal and audio signal to the video section by using the Line Adaptor (VW-KM3) as shown below.

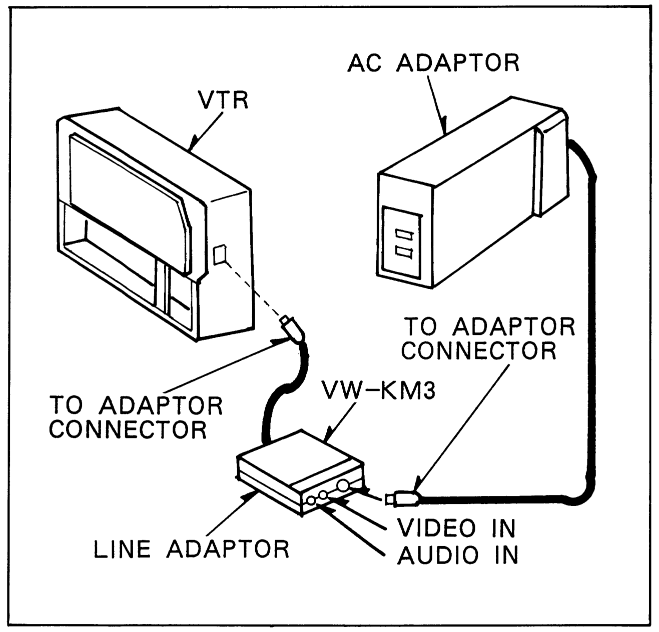

AC ADAPTOR
VTR
TO ADAPTOR
CONNECTOR
VW-KM3
TO ADAPTOR
CONNECTOR
LINE ADAPTOR
VIDEO IN
AUDIO IN

Fig. E1

Note:
The Line Adaptor (VW-KM3) is available to check the only VTR section.

PREPARATION II (For B/EG/E models)

(1) Remove the casing panels.
    (Refer to the disassemble section)
(2) Connect the jumper wire between P6011-5 and GND as shown below.
(3) Supply the video signal and audio signal to video section by using the Line Adaptor (VW-KM3) as shown Fig. E1.

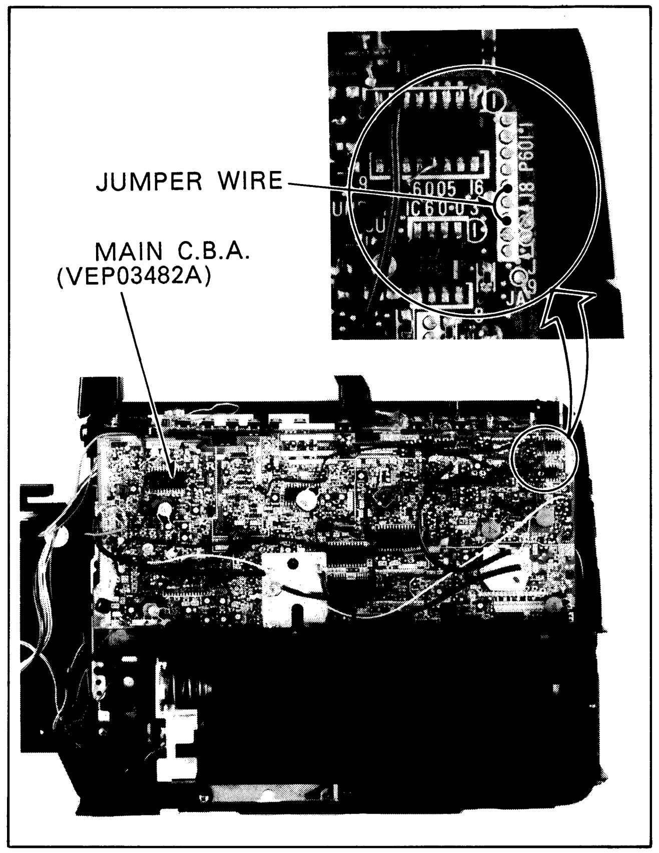
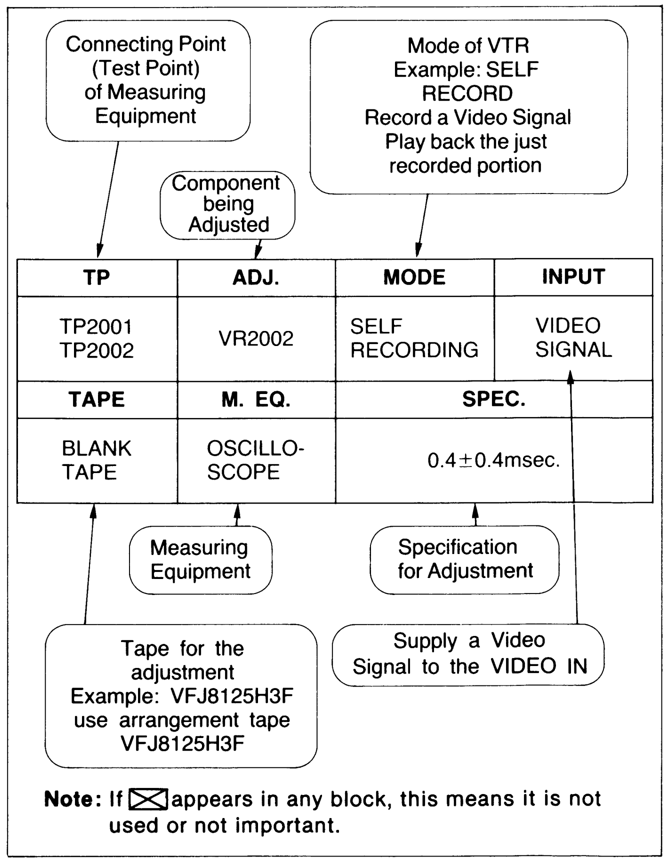

JUMPER WIRE
MAIN C.B.A.
(VEP03482A)

Fig. E2

HOW TO READ THE ADJUSTMENT PROCEDURES


Connecting Point
(Test Point)
of Measuring
Equipment
Mode of VTR
Example: SELF
RECORD
Record a Video Signal
Play back the just
recorded portion
Component
being
Adjusted
Measuring
Equipment
Specification
for Adjustment
Tape for the
adjustment
Example: VFJ8125H3F
use arrangement tape
VFJ8125H3F
Supply a Video
Signal to the VIDEO IN

TP	ADJ.	MODE	INPUT
TP2001 TP2002	VR2002	SELF RECORDING	VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO- SCOPE	0.4±0.4msec.	

Note: If ☒ appears in any block, this means it is not used or not important.

Fig. E3

FOR TRIGGERING OF THE OSCILLOSCOPE

To trigger the Oscilloscope, the following test point is used.
H.rate : TP3002 (Video output)
V.rate : TP2001 (Head Switching signal)

POWER SECTION

1. REG. 9V ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP1002	VR1002	REC • PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	$8.6^{+0.1}_{-0.05}$V	

2. REG. 5V ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP1003	VR1003	CAMERA RECORDING	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	4.91±0.02V	

3. REG. 16V ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP1001	VR1001	REC • PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	15.2±0.05V	

4. UNDER CUT ADJUSTMENT

TP	ADJ.	MODE	INPUT
P6011-(6)	VR6002	REC • PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	HIGH → PULSE → LOW	

(1) Supply the DC voltage 10.5+−0.05V to the 14P multi−connector Pin (1) Hot and Pin (3) GND.
(2) Connect the oscilloscope to P6011−(6).
(3) Turn the under cut control (VR6002) fully counter clockwise.
(4) Turn VR6002 clockwise slowly until the wave−form is changed from high to low through the pulse trains.

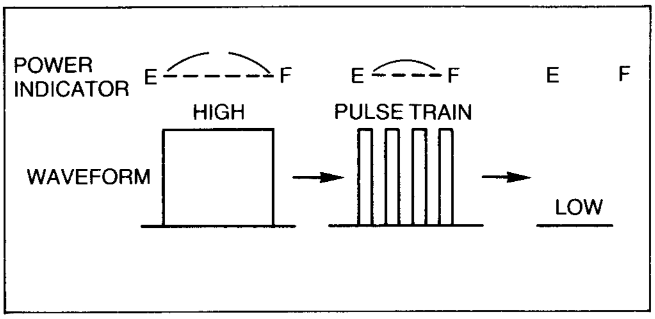

POWER INDICATOR
E
F
E
F
E
F
HIGH
PULSE TRAIN
WAVEFORM
LOW

Fig. E4

SERVO SECTION

5. PG SHIFTER ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP2001 TP3002	VR2001	PLAY	
TAPE	**M. EQ.**	**SPEC.**	
ALIGNMENT TAPE (VFJ8125H3F)	OSCILLO-SCOPE	6.5H±0.5H	

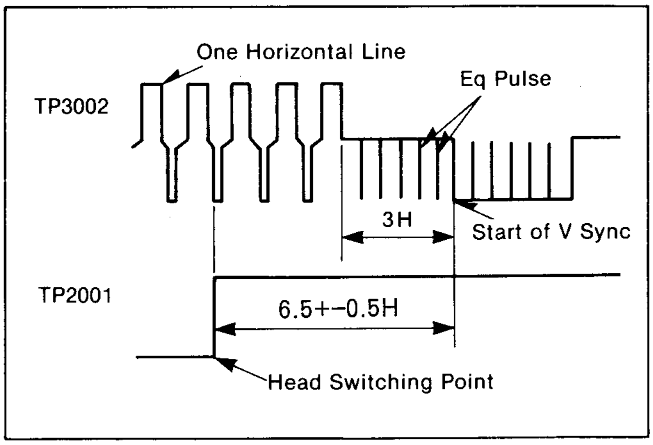

One Horizontal Line
Eq Pulse
TP3002
3H
Start of V Sync
TP2001
6.5+−0.5H
Head Switching Point

Fig. E5

LUMINANCE & CHROMINANCE SECTION

6. E-E LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3002	VR3001	STOP	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
	OSCILLO-SCOPE	A=1.0±0.1Vp-p B=0.6±0.1Vp-p	

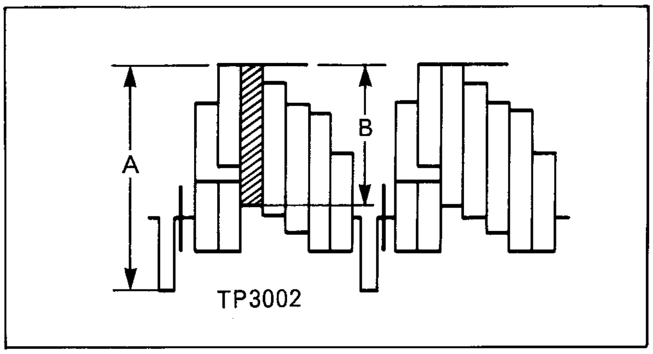


Fig. E6

7. SYNC TIP FREQUENCY AND DEVIATION ADJUSTMENT

7-1. Sync Tip Frequency Adjustment

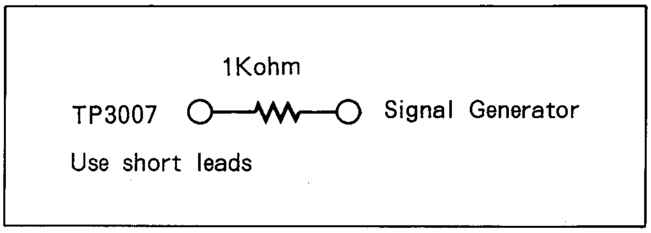
TP	ADJ.	MODE	INPUT
TP3007	VR3004	REC • PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	FREQ. COUNTER	3.8MHz±0.05MHz	

7-2. Deviation Adjustment

TP	ADJ.	MODE	INPUT
TP3003 (HOT) TP3004 (GND)	VR3005	REC • PLAY	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE FREQ. COUNTER	INNER BEAT IS MAXIMUM	

(1) Supply colour bar video signal to 14P multi connector through Line adaptor (VW−KM3). (See, PREPARATION I or II).

(2) Connect a sinal generator (sine wave) to TP3007 on Main C.B.A. through a resistor (1 Kohm). Set the frequency and output level of the signal generator.
Frequency : 4.8MHZ+−0.05MHZ
Output level : 0.1Vp−p.

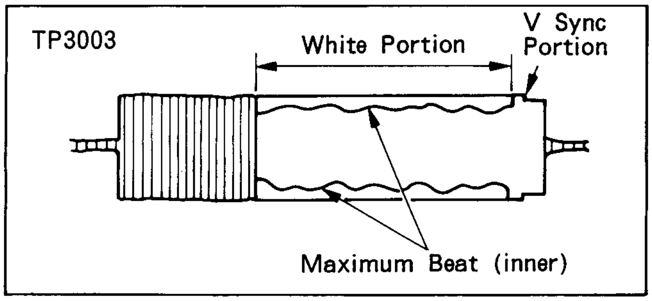


1Kohm
TP3007
Signal Generator
Use short leads

Fig. E7

(3) Connect the oscilloscope to TP3003 (HOT) and TP3004 (GND) on Main C.B.A. Head Amp Section, use TP2001 as a trigger.

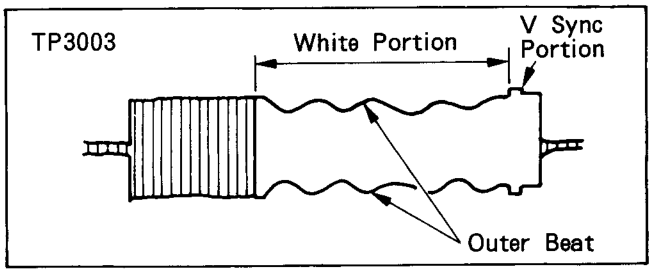
(4) Adjust VR3005 so that inner beat at white portion of colour bar becomes maximum.



TP3003
White Portion
V Sync Portion
Maximum Beat (inner)

Fig. E8

(Misadjustment)



TP3003
White Portion
V Sync Portion
Outer Beat

Fig. E9

8. AFC ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP8003	VR8002	STOP	
TAPE	**M. EQ.**	**SPEC.**	
	FREQ. COUNTER	4.2±0.05MHz	

(1) Connect Diode to TP8002 as shown below.

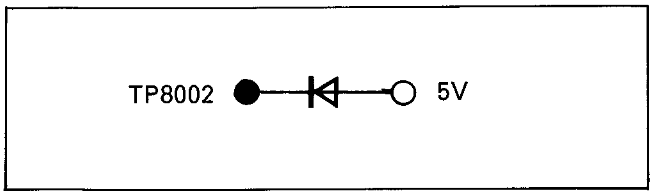


Fig. E10

(2) Connect the frequency counter to TP8003.
(3) Adjust the VR8002 so that frequency become 4.2+–0.05MHZ.

9. WHITE AND DARK CLIP ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3005	VR3002 VR3003	REC	COLOUR BAR (W/WHITE WINDOW)
TAPE	**M. EQ.**	**SPEC.**	
	OSCILLO-SCOPE	A=188±5% B=155±5%	

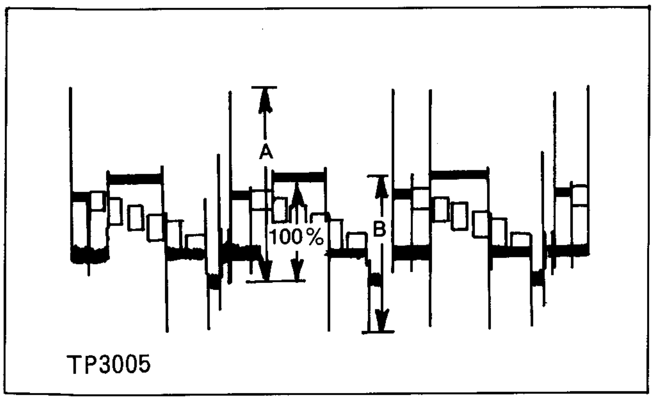

A
100%
B
TP3005

Fig. E11

10. RECORDING CURRENT ADJUSTMENT

10-1. REC CHROMA LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP5003 (HOT) TP5004 (GND)	VR8001	REC • PLAY	COLOUR BAR (W/WHITE WINDOW)
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	40±5mVp-p	

(1) Connect the Oscilloscope to TP5003 (HOT) and TP5004 (GND).
(2) Eliminate Luminance signal by turning VR3006.
(3) Adjust VR8001 so that Chroma level become 40+–5mVp–p.

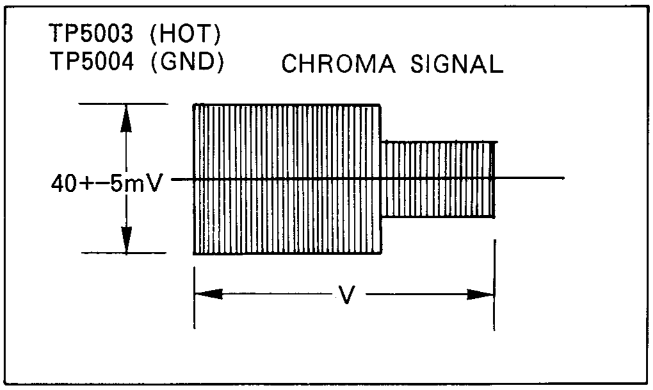

TP5003 (HOT)
TP5004 (GND)
CHROMA SIGNAL
40+–5mV
V

Fig. E12

10-2. LUMINANCE RECORDING CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP5003 (HOT) TP5004 (GND)	VR3006	REC • PLAY	VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	140mV±5mVp-p	

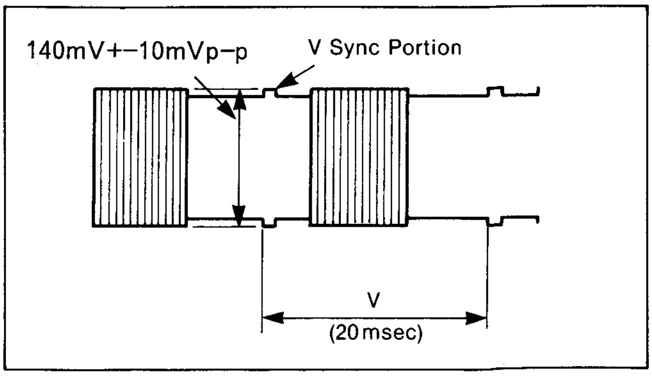

140mV+–10mVp–p
V Sync Portion
V
(20msec)

Fig. E13

11. LINE NOISE CANCEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3008	VR3012	SELF RECORDING	
TAPE	**M. EQ.**	**SPEC.**	
BLANK	OSCILLO-SCOPE	Less than 16mVp-p	

(1) Record the video signal.
(2) Connect the oscilloscope to TP3008.
(3) Playback just recorded portion.
(4) Adjust VR3012 so that level between sync and white 100% become less than 16mVp−p.

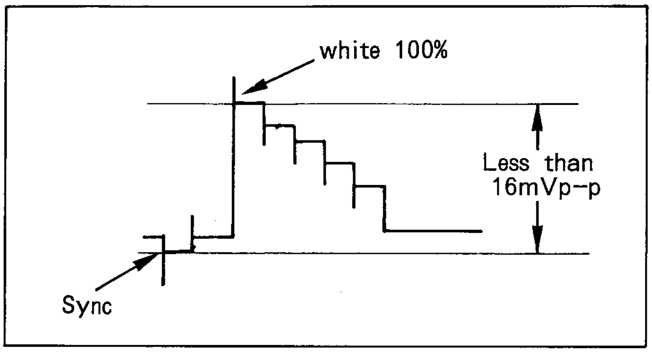


Fig. E14

12. VIDEO PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3002	VR3007	SELF RECORDING	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
	OSCILLO-SCOPE	A=1.0±0.05Vp-p B=0.5±0.15Vp-p	

(1) Record the colour bar signal.
(2) Connect the oscilloscope to TP3002.
(3) Adjust the VR3007 so that level become A=1.0+−0.05Vp−p B=0.5+−0.15Vp−p.

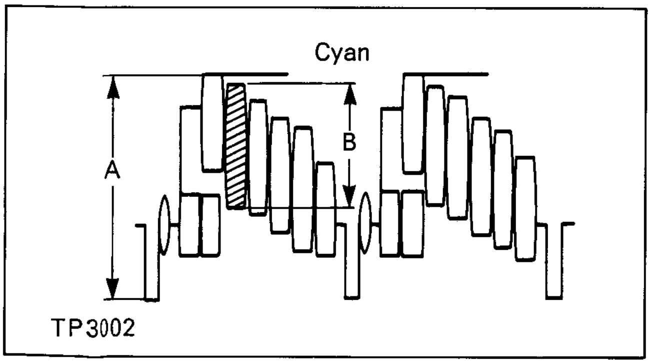


Fig. E15

AUDIO SECTION

13. AUDIO BIAS CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4002 (HOT) TP4003 (GND)	C4002	REC • PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	2.9mVrms±0.1mVrms	

14. AUDIO PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
LINE OUT (TP4001)	VR4001	SELF RECORDING	1KHz AUDIO −60dB SIGNAL/ VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	SIGNAL GENERA-TOR/D.V.M.	EE LEVEL=−8.0±2dB P.B LEVEL=−±1dB	

15. CHARACTER POSITION ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIEW FINDER	VR6001	STOP	
TAPE	**M. EQ.**	**SPEC.**	
	VIEW FINDER	CHARACTER IS CENTER	

(1) Connect the EVF unit to the VTR unit.
(2) Display the battery remaining indicator and counter number on the EVF.
(3) Adjust the osc control (VR6001) so that the character position is shown below.

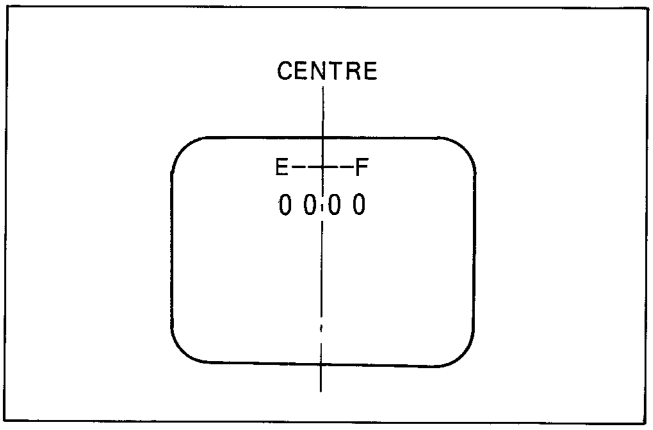
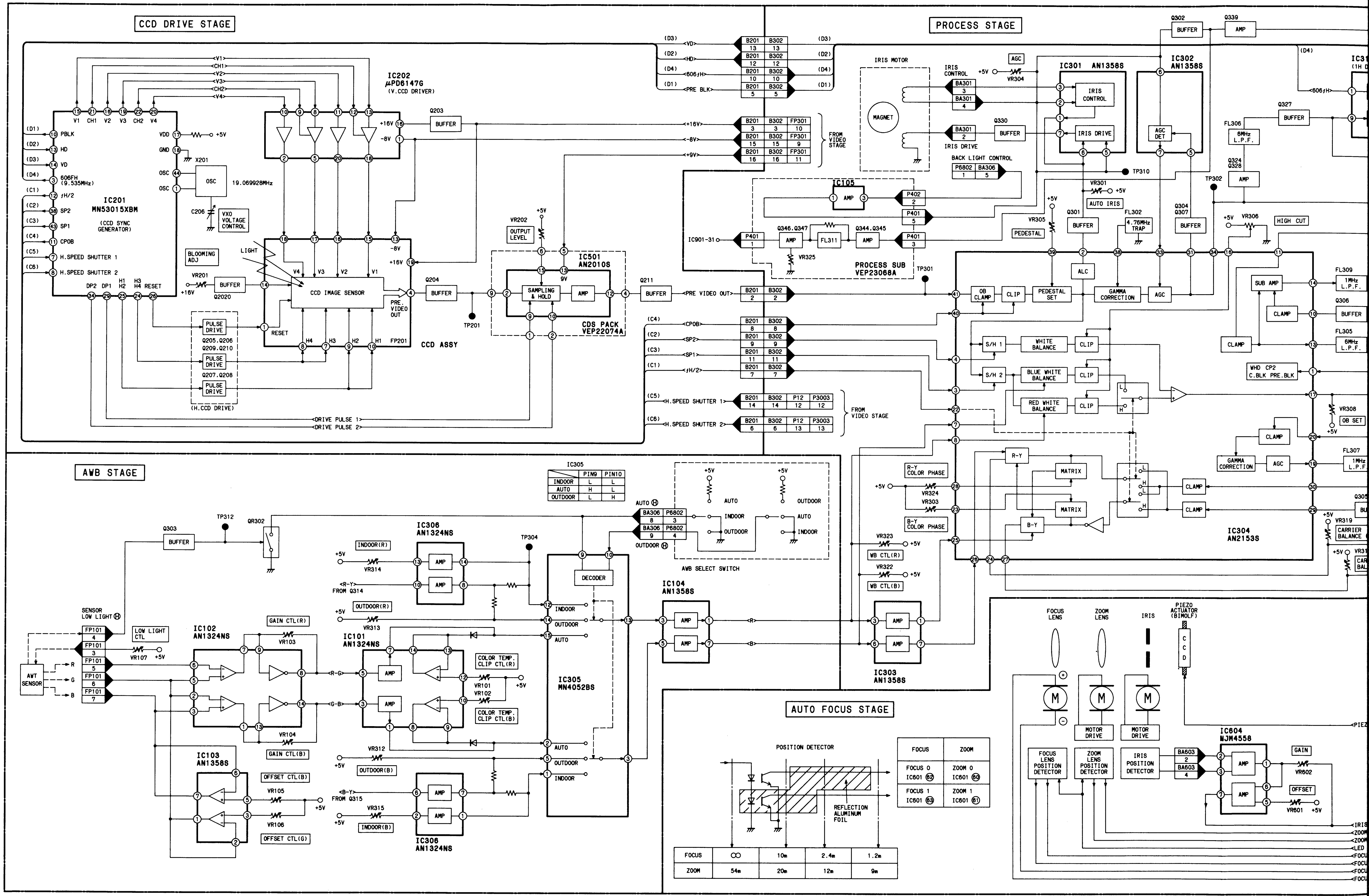
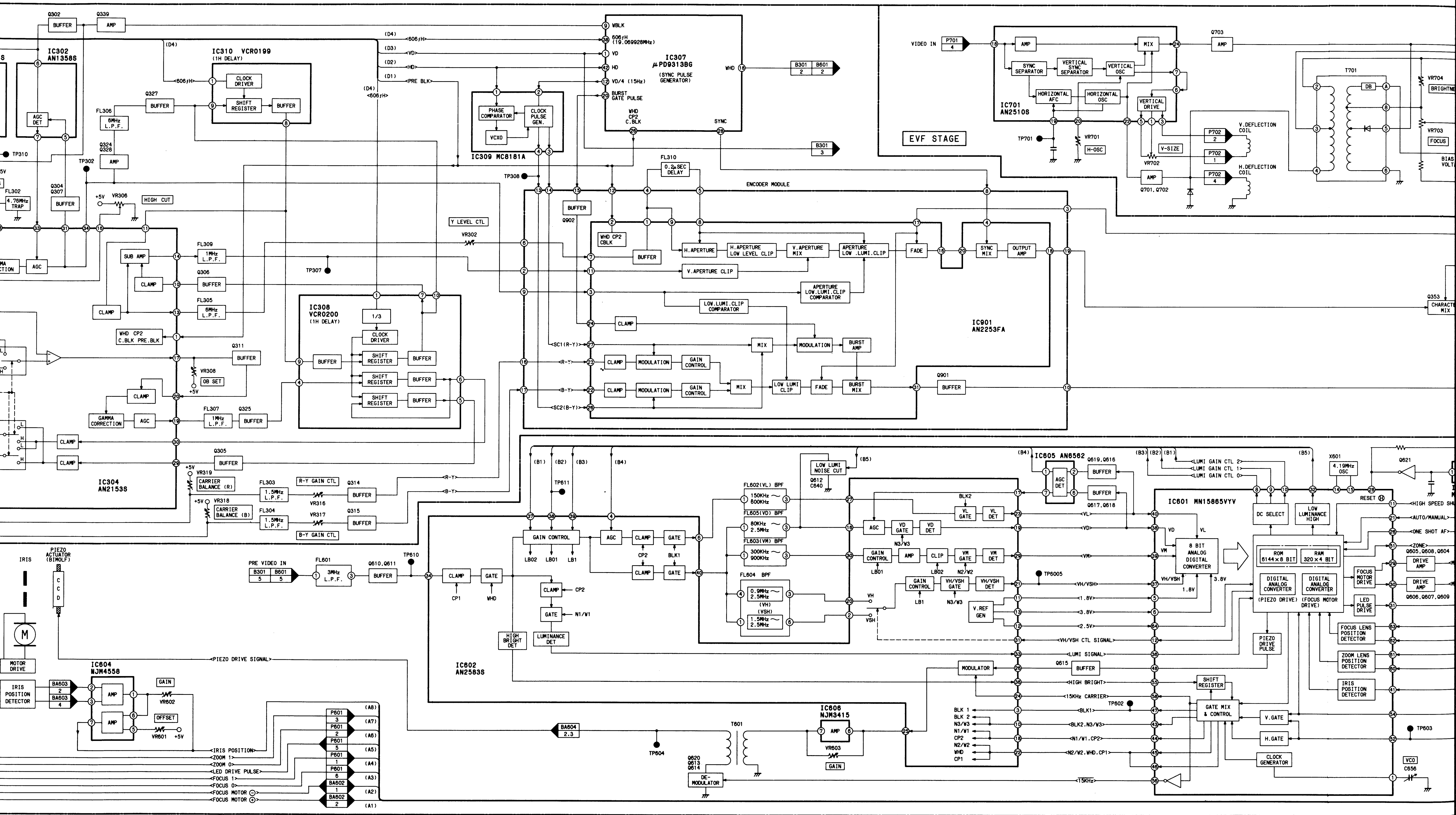
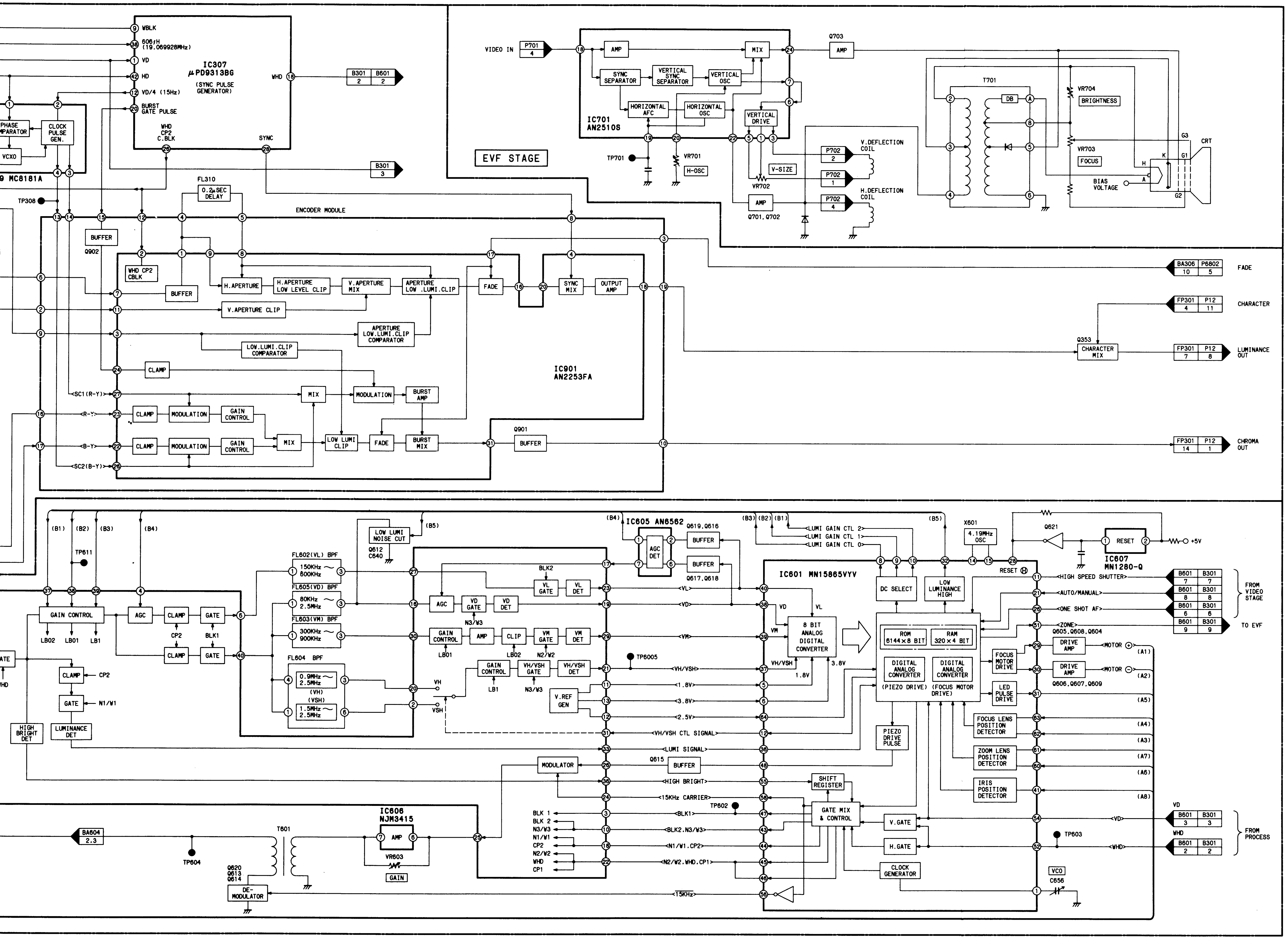


Fig. E16

SECTION 3
BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS
3-1. CAMERA STAGE BLOCK DIAGRAM

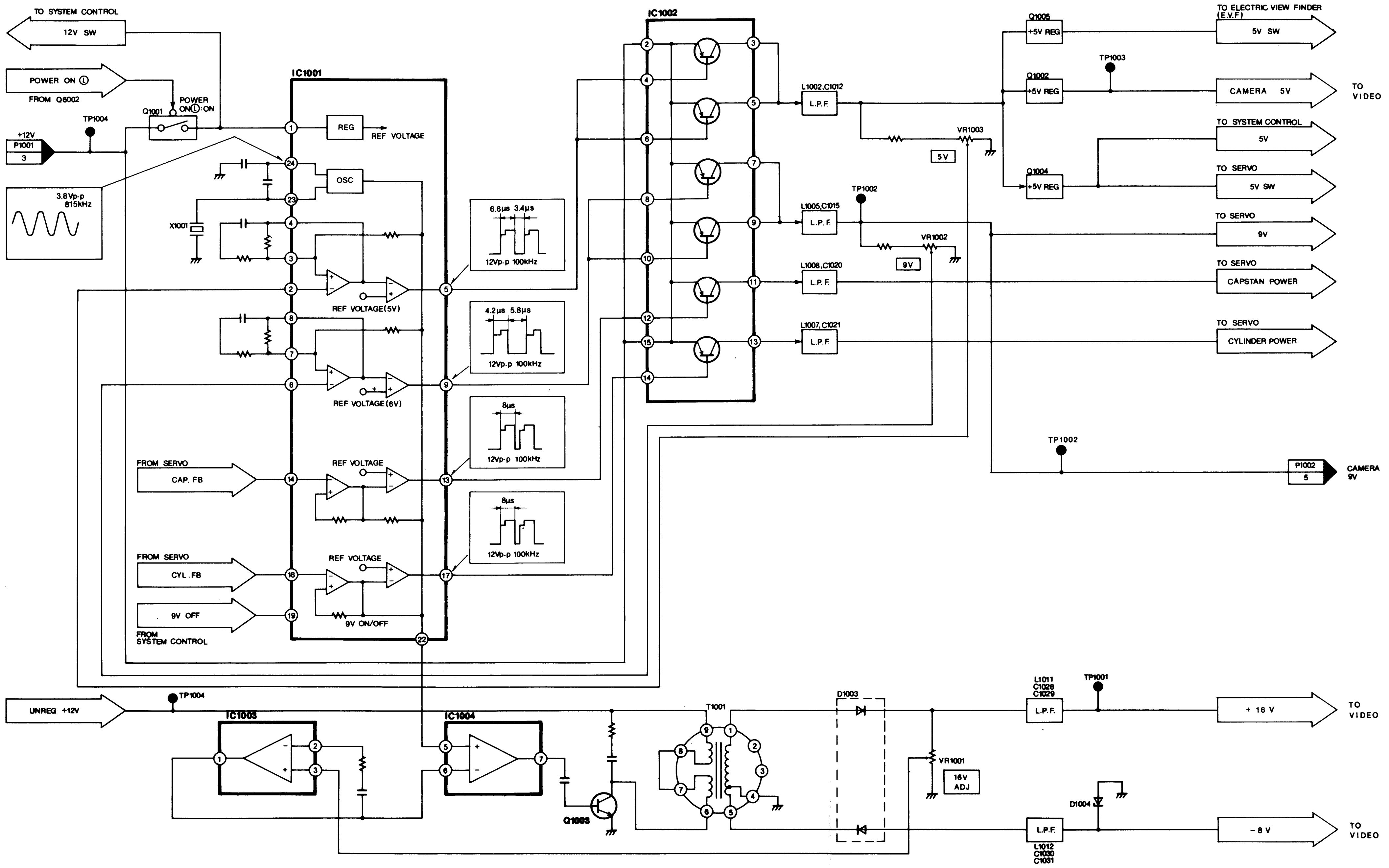

CCD DRIVE STAGE
IC202
µPD6147G
(V.CCD DRIVER)
IC201
MN53015XBM
(CCD SYNC GENERATOR)
X201
OSC
19.069928MHz
C206
VXO VOLTAGE CONTROL
BLOOMING ADJ
VR201
BUFFER
Q2020
Q203
BUFFER
Q204
BUFFER
CCD IMAGE SENSOR
PRE. VIDEO OUT
LIGHT
RESET
PULSE DRIVE
Q205,Q206
Q209,Q210
Q207,Q208
(H.CCD DRIVE)
CCD ASSY
FP201
TP201
VR202
OUTPUT LEVEL
IC501
AN2010S
SAMPLING & HOLD
AMP
CDS PACK
VEP22074A
Q211
BUFFER
PRE VIDEO OUT
DRIVE PULSE 1
DRIVE PULSE 2
H.SPEED SHUTTER 1
H.SPEED SHUTTER 2
FROM VIDEO STAGE
PROCESS STAGE
IRIS MOTOR
MAGNET
IRIS CONTROL
IRIS DRIVE
AGC
VR304
Q330
BUFFER
BACK LIGHT CONTROL
IC301 AN1358S
IRIS CONTROL
IRIS DRIVE
IC302
AN1358S
AGC DET
TP310
VR301
AUTO IRIS
IC105
AMP
Q346,Q347
AMP
FL311
Q344,Q345
AMP
VR325
PROCESS SUB
VEP23068A
TP301
IC901-31
VR305
PEDESTAL
Q301
BUFFER
ALC
FL302
4.76MHz TRAP
Q304
Q307
BUFFER
TP302
Q324
Q328
AMP
VR306
HIGH CUT
Q302
BUFFER
Q339
AMP
Q327
BUFFER
FL306
6MHz L.P.F.
OB CLAMP
CLIP
PEDESTAL SET
GAMMA CORRECTION
AGC
S/H 1
WHITE BALANCE
S/H 2
BLUE WHITE BALANCE
RED WHITE BALANCE
CLIP
SUB AMP
CLAMP
FL309
1MHz L.P.F.
Q306
BUFFER
FL305
6MHz L.P.F.
WHD CP2
C.BLCK PRE.BLK
VR308
OB SET
FL307
1MHz L.P.F.
R-Y COLOR PHASE
VR324
VR303
B-Y COLOR PHASE
R-Y
B-Y
MATRIX
CLAMP
IC304
AN2153S
VR319
CARRIER BALANCE
VR323
WB CTL(R)
VR322
WB CTL(B)
AWB STAGE
IC305
PIN9 PIN10
INDOOR L L
AUTO H L
OUTDOOR L H
AUTO
INDOOR
OUTDOOR
AWB SELECT SWITCH
TP312
QR302
Q303
BUFFER
SENSOR LOW LIGHT
LOW LIGHT CTL
VR107
AWT SENSOR
R
G
B
IC102
AN1324NS
GAIN CTL(R)
VR103
VR104
GAIN CTL(B)
IC103
AN1358S
OFFSET CTL(B)
VR105
VR106
OFFSET CTL(G)
IC306
AN1324NS
INDOOR(R)
VR314
FROM Q314
OUTDOOR(R)
VR313
IC101
AN1324NS
COLOR TEMP. CLIP CTL(R)
VR101
VR102
COLOR TEMP. CLIP CTL(B)
VR312
OUTDOOR(B)
FROM Q315
VR315
INDOOR(B)
TP304
DECODER
IC305
MN4052BS
IC104
AN1358S
IC303
AN1358S
AUTO FOCUS STAGE
POSITION DETECTOR
REFLECTION ALUMINUM FOIL
FOCUS ZOOM
FOCUS 0 IC601 62 / ZOOM 0 IC601 60
FOCUS 1 IC601 63 / ZOOM 1 IC601 61
FOCUS ∞ 10m 2.4m 1.2m
ZOOM 54m 20m 12m 9m
FOCUS LENS
ZOOM LENS
IRIS
PIEZO ACTUATOR (BIMOLF)
CCD
M
MOTOR DRIVE
FOCUS LENS POSITION DETECTOR
ZOOM LENS POSITION DETECTOR
IRIS POSITION DETECTOR
IC604
MJM4558
GAIN
VR602
OFFSET
VR601


IC302 AN1358S
IC310 VCR0199 (1H DELAY)
IC307 μPD9313BG (SYNC PULSE GENERATOR)
IC309 MC6181A
IC308 VCR0200 (1H DELAY)
IC304 AN2153S
IC901 AN2253FA
ENCODER MODULE
IC701 AN2510S
EVF STAGE
VIDEO IN
T701
V.DEFLECTION COIL
H.DEFLECTION COIL
IC602 AN2583S
IC605 AN6562
IC601 MN15865VYV
IC604 NJM4558
IC606 NJM3415
T601
PIEZO ACTUATOR (BIMOLF)
CCD
MOTOR DRIVE
IRIS POSITION DETECTOR
PRE VIDEO IN
FL601 3MHz L.P.F.
FL602(VL) BPF 150KHz ~ 600KHz
FL605(VD) BPF 80KHz ~ 2.5MHz
FL603(VM) BPF 300KHz ~ 900KHz
FL604 BPF 0.9MHz ~ 2.5MHz 1.5MHz ~ 2.5MHz
8 BIT ANALOG DIGITAL CONVERTER
ROM 6144×8 BIT
RAM 320×4 BIT
DIGITAL ANALOG CONVERTER (PIEZO DRIVE)
DIGITAL ANALOG CONVERTER (FOCUS MOTOR DRIVE)
GATE MIX & CONTROL
CLOCK GENERATOR
X601 4.19MHz OSC
FOCUS LENS POSITION DETECTOR
ZOOM LENS POSITION DETECTOR
IRIS POSITION DETECTOR
<PIEZO DRIVE SIGNAL>
<IRIS POSITION>
<ZOOM 1>
<ZOOM 0>
<LED DRIVE PULSE>
<FOCUS 1>
<FOCUS 0>
<FOCUS MOTOR ⊖>
<FOCUS MOTOR ⊕>
<HIGH SPEED SHU
<AUTO/MANUAL>
<ONE SHOT AF>
<ZONE>
TP301 TP302 TP307 TP308 TP310 TP601 TP602 TP603 TP604 TP610 TP611 TP701 TP6005


IC307
μPD9313BG
(SYNC PULSE GENERATOR)
WBLK
606fH (19.069928MHz)
VD
HD
VD/4 (15Hz)
BURST GATE PULSE
WHD CP2 C.BLK
SYNC
WHD
B301 2
B601 2
B301 3
PHASE COMPARATOR
CLOCK PULSE GEN.
VCXO
MC8181A
TP308
FL310
0.2μSEC DELAY
ENCODER MODULE
BUFFER
Q902
WHD CP2 CBLK
H.APERTURE
H.APERTURE LOW LEVEL CLIP
V.APERTURE MIX
APERTURE LOW.LUMI.CLIP
FADE
SYNC MIX
OUTPUT AMP
V.APERTURE CLIP
APERTURE LOW.LUMI.CLIP COMPARATOR
LOW.LUMI.CLIP COMPARATOR
CLAMP
MIX
MODULATION
BURST AMP
IC901
AN2253FA
GAIN CONTROL
LOW LUMI CLIP
BURST MIX
Q901
<SC1(R-Y)>
<R-Y>
<B-Y>
<SC2(B-Y)>
VIDEO IN
P701 4
AMP
MIX
SYNC SEPARATOR
VERTICAL SYNC SEPARATOR
VERTICAL OSC
HORIZONTAL AFC
HORIZONTAL OSC
VERTICAL DRIVE
IC701
AN2510S
TP701
VR701
H-OSC
EVF STAGE
Q703
T701
DB
VR704
BRIGHTNESS
VR703
FOCUS
BIAS VOLTAGE
CRT
G1
G2
G3
K
H
A
P702 2
P702 1
P702 4
V.DEFLECTION COIL
H.DEFLECTION COIL
V-SIZE
VR702
Q701, Q702
BA306 10
P6802 5
FADE
FP301 4
P12 11
CHARACTER
Q353
CHARACTER MIX
FP301 7
P12 8
LUMINANCE OUT
FP301 14
P12 1
CHROMA OUT
(B1) (B2) (B3) (B4)
TP611
GAIN CONTROL
LB02 LB01 LB1
AGC
CLAMP
GATE
CP2
BLK1
HIGH BRIGHT DET
LUMINANCE DET
N1/W1
LOW LUMI NOISE CUT
Q612
C640
(B5)
FL602(VL) BPF
150KHz ~ 600KHz
FL605(VD) BPF
80KHz ~ 2.5MHz
FL603(VM) BPF
300KHz ~ 900KHz
FL604 BPF
0.9MHz ~ 2.5MHz
(VH)
(VSH)
1.5MHz ~ 2.5MHz
BLK2
VL GATE
VL DET
VD GATE
VD DET
N3/W3
CLIP
VM GATE
VM DET
LB02
N2/W2
VH/VSH GATE
VH/VSH DET
V.REF GEN
VH
VSH
TP6005
IC605 AN6562
AGC DET
BUFFER
Q619, Q616
Q617, Q618
<VL>
<VD>
<VM>
<VH/VSH>
<1.8V>
<3.8V>
<2.5V>
<VH/VSH CTL SIGNAL>
<LUMI SIGNAL>
<HIGH BRIGHT>
<15KHz CARRIER>
<BLK1>
<BLK2.N3/W3>
<N1/W1.CP2>
<N2/W2.WHD.CP1>
<15KHz>
MODULATOR
Q615
TP602
BLK 1
BLK 2
N3/W3
N1/W1
CP2
N2/W2
WHD
CP1
IC606
NJM3415
VR603
GAIN
BA604 2.3
TP604
T601
Q620 Q613 Q614
DE-MODULATOR
IC601 MN15865VYV
8 BIT ANALOG DIGITAL CONVERTER
3.8V
1.8V
DC SELECT
LOW LUMINANCE HIGH
ROM 6144×8 BIT
RAM 320×4 BIT
DIGITAL ANALOG CONVERTER (PIEZO DRIVE)
DIGITAL ANALOG CONVERTER (FOCUS MOTOR DRIVE)
PIEZO DRIVE PULSE
SHIFT REGISTER
GATE MIX & CONTROL
V.GATE
H.GATE
CLOCK GENERATOR
FOCUS MOTOR DRIVE
LED PULSE DRIVE
FOCUS LENS POSITION DETECTOR
ZOOM LENS POSITION DETECTOR
IRIS POSITION DETECTOR
<LUMI GAIN CTL 2>
<LUMI GAIN CTL 1>
<LUMI GAIN CTL 0>
X601
4.19MHz OSC
Q621
RESET
IC607
MN1280-Q
+5V
RESET
<HIGH SPEED SHUTTER>
<AUTO/MANUAL>
<ONE SHOT AF>
<ZONE>
B601 7 / B301 7
B601 8 / B301 8
B601 6 / B301 6
B601 9 / B301 9
FROM VIDEO STAGE
TO EVF
Q605, Q608, Q604
DRIVE AMP
<MOTOR ⊕>
<MOTOR ⊖>
Q606, Q607, Q609
(A1) (A2) (A5) (A4) (A3) (A7) (A6) (A8)
TP603
<VD>
<WHD>
VD
B601 3 / B301 3
WHD
B601 2 / B301 2
FROM PROCESS
VCO
C656

Next Page:
POWER SUPPLY & SYSTEM CONTROL Section

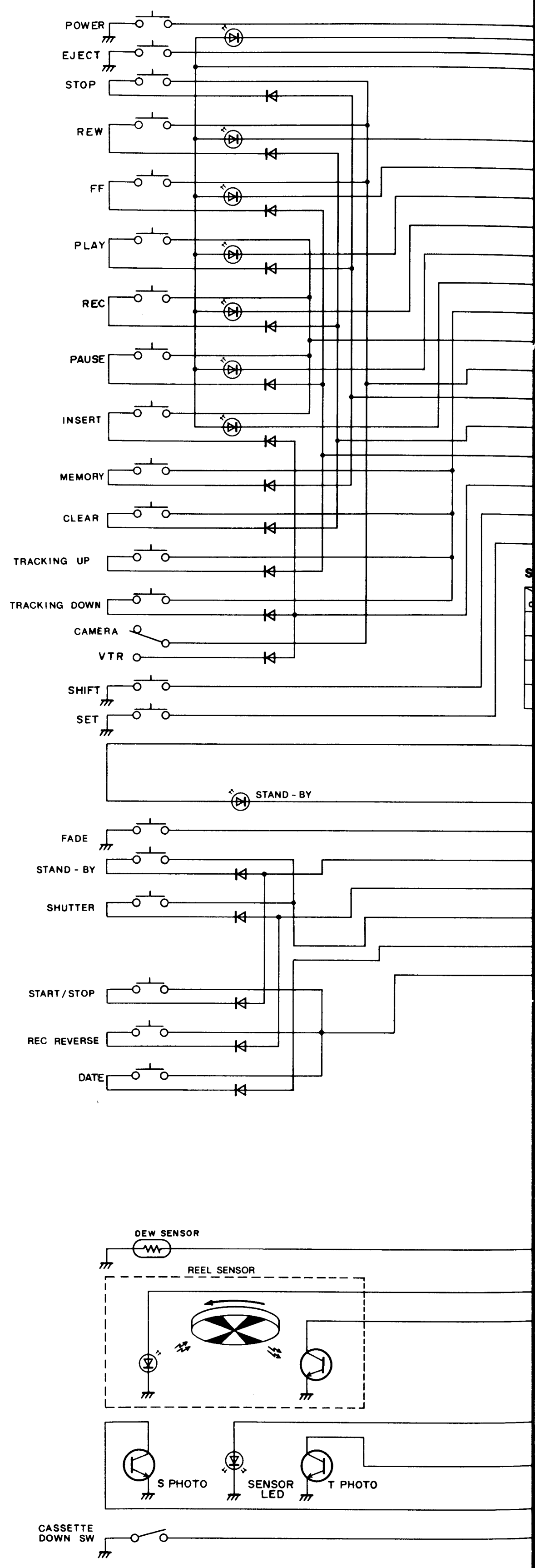
3-2. POWER SUPPLY BLOCK DIAGRAM


TO SYSTEM CONTROL
12V SW
POWER ON Ⓛ
FROM Q6002
Q1001
POWER ONⓁ:ON
TP1004
+12V
P1001
3
3.8Vp-p 815kHz
X1001
IC1001
REG
REF VOLTAGE
OSC
REF VOLTAGE(5V)
REF VOLTAGE(6V)
FROM SERVO
CAP. FB
REF VOLTAGE
FROM SERVO
CYL. FB
REF VOLTAGE
9V OFF
FROM SYSTEM CONTROL
9V ON/OFF
6.6μs 3.4μs
12Vp-p 100kHz
4.2μs 5.8μs
12Vp-p 100kHz
8μs
12Vp-p 100kHz
8μs
12Vp-p 100kHz
IC1002
L1002,C1012
L.P.F.
L1005,C1015
L.P.F.
L1008,C1020
L.P.F.
L1007,C1021
L.P.F.
VR1003
5V
TP1002
VR1002
9V
Q1005
+5V REG
Q1002
+5V REG
TP1003
Q1004
+5V REG
TO ELECTRIC VIEW FINDER (E.V.F)
5V SW
CAMERA 5V
TO VIDEO
TO SYSTEM CONTROL
5V
TO SERVO
5V SW
TO SERVO
9V
TO SERVO
CAPSTAN POWER
TO SERVO
CYLINDER POWER
TP1002
P1002
5
CAMERA 9V
UNREG +12V
TP1004
IC1003
IC1004
Q1003
T1001
D1003
VR1001
16V ADJ
L1011 C1028 C1029
L.P.F.
TP1001
+ 16 V
TO VIDEO
D1004
L.P.F.
L1012 C1030 C1031
- 8 V
TO VIDEO

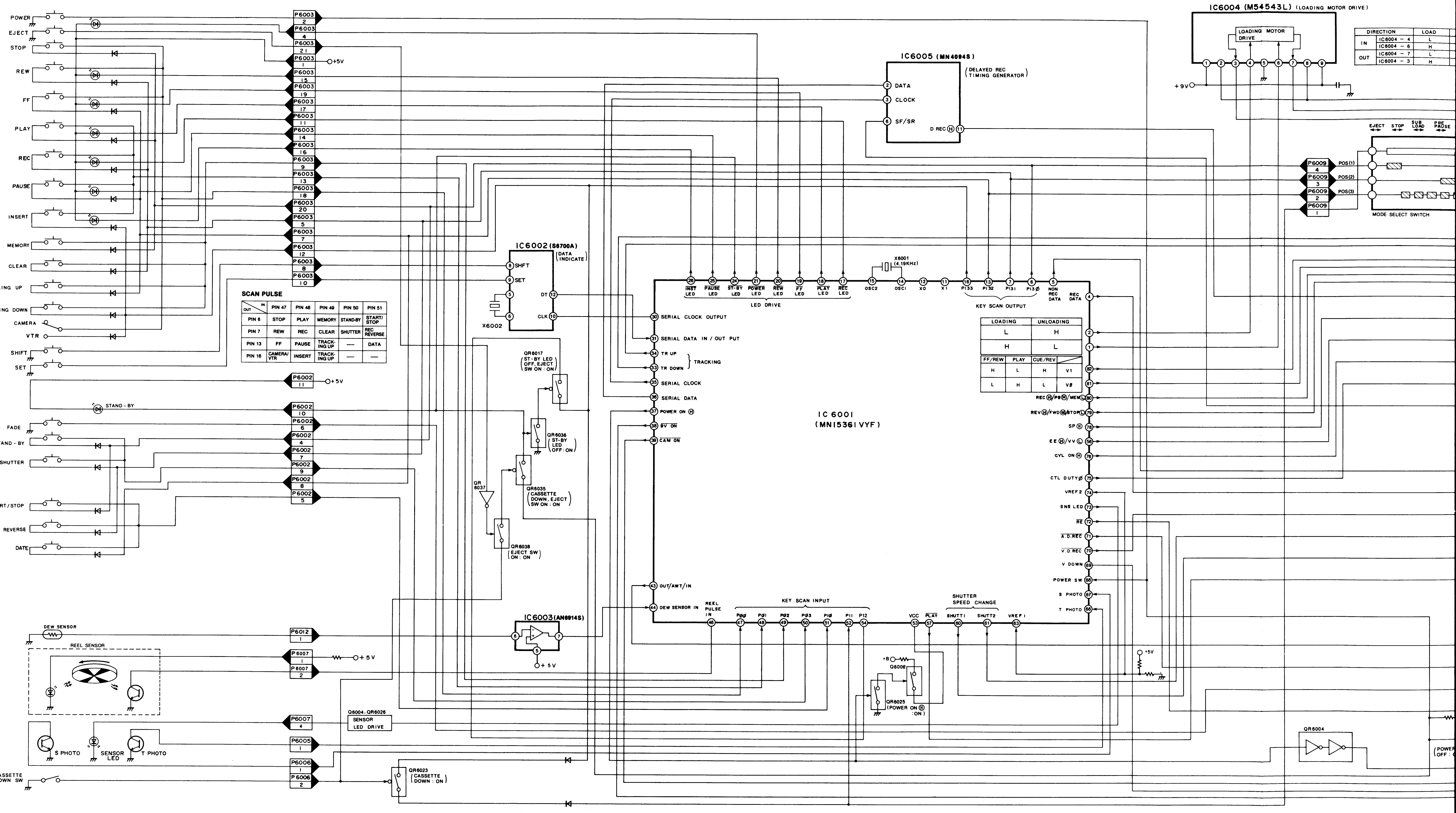
3-3. SYSTEM CONTROL BLOCK DIAGRAM

MICROCOMPUTER I/O CHART
(IC6001: MN15361VYF)

PIN	I/O	NAME/OPERATION
1	OUT	LOAD Ⓗ
2	OUT	UNLOAD Ⓗ
3	IN	HQ
4	OUT	REC DATA
5	OUT	NON REC DATA
6	OUT	SCAN OUT
7	OUT	
8	OUT	ROS 2
9	IN	ROS 1
10	—	VSS
11	—	NOT USED
12	—	NOT USED
13	OUT	SCAN OUT
14	IN	OSC 1
15	OUT	OSC 2
16	OUT	SCAN OUT
17	OUT	REC LED Ⓛ
18	OUT	PLAY LED Ⓛ
19	OUT	FF LED Ⓛ
20	OUT	REW LED Ⓛ
21	OUT	POWER LED Ⓛ
22	—	NOT USED
23	—	NOT USED
24	OUT	STAND-BY LED Ⓛ
25	OUT	PAUSE LED Ⓛ
26	OUT	INSERT LED Ⓛ
27	—	NOT USED
28	—	NOT USED
29	IN	IRQ
30	OUT	SERIAL CLOCK OUT
31	IN/OUT	SERILA DATA IN/OUT
32	IN	RESET Ⓛ
33	OUT	TRACKING DOWN
34	OUT	TRACKING UP
35	OUT	SERIAL CLOCK
36	OUT	SERIAL DATA
37	OUT	POWER ON Ⓗ
38	OUT	POWER SAVE Ⓗ
39	OUT	CAMERA POWER ON Ⓗ
40	OUT	COMMON
41	—	NOT USED
42	—	NOT USED
43	IN	OUT Ⓗ/AWT Ⓜ/IN Ⓛ
44	IN	DEW SENSOR Ⓛ
45	IN	SW 1
46	IN	REEL SENSOR
47	IN	SCAN IN
48	IN	
49	IN	
50	IN	
51	IN	
52	IN	
53	—	VDD
54	IN	SCAN IN
55	OUT	CLOCK OUT
56	OUT	EE Ⓗ/VV Ⓛ
57	OUT	PLAY Ⓛ
58	OUT	AUDIO EE Ⓗ
59	OUT	AUDIO MUTE Ⓗ
60	OUT	SHUTTER 1
61	OUT	SHUTTER 2
62	OUT	TARRY Ⓛ
63	IN	V REF 1
64	—	NOT USED
65	—	NOT USED
66	IN	TAKE UP PHOTO
67	IN	SUPPLY PHOTO
68	IN	POWER SW ON Ⓛ
69	IN	POWER OFF Ⓛ
70	OUT	VIDEO DELAYED REC Ⓛ
71	OUT	AUDIO DELAYED REC Ⓛ
72	OUT	ROTARY ERASE Ⓛ
73	OUT	SENSOR LED
74	IN	V REF 2
75	OUT	CONTROL DUTY Ⓛ
76	OUT	CYLINDER ON Ⓗ
77	OUT	FULL ERASE Ⓗ
78	OUT	SP Ⓗ
79	OUT	REV Ⓗ/FWD Ⓜ/STOP Ⓛ
80	OUT	REC Ⓗ/P.B Ⓜ/MEMORY Ⓛ
81	OUT	V 0
82	OUT	V 1
83	—	NOT USED
84	—	NOT USED


POWER
EJECT
STOP
REW
FF
PLAY
REC
PAUSE
INSERT
MEMORY
CLEAR
TRACKING UP
TRACKING DOWN
CAMERA
VTR
SHIFT
SET
STAND - BY
FADE
STAND - BY
SHUTTER
START/STOP
REC REVERSE
DATE
DEW SENSOR
REEL SENSOR
S PHOTO
SENSOR LED
T PHOTO
CASSETTE DOWN SW

OL BLOCK DIAGRAM


POWER
EJECT
STOP
REW
FF
PLAY
REC
PAUSE
INSERT
MEMORY
CLEAR
ING UP
ING DOWN
CAMERA
VTR
SHIFT
SET
STAND - BY
FADE
AND - BY
SHUTTER
RT/STOP
REVERSE
DATE
DEW SENSOR
REEL SENSOR
S PHOTO
SENSOR LED
T PHOTO
ASSETTE
OWN SW
P6003
P6002
P6012
P6007
P6005
P6006
+5V
IC6002 (S6700A)
(DATA INDICATE)
SHFT
SET
DT
CLK
X6002
QR6017 (ST-BY LED OFF, EJECT SW ON : ON)
QR6036 (ST-BY LED OFF : ON)
QR6035 (CASSETTE DOWN, EJECT SW ON : ON)
QR 6037
QR6038 (EJECT SW ON : ON)
IC6003 (AN6914S)
Q6004, QR6026 SENSOR LED DRIVE
QR6023 (CASSETTE DOWN : ON)
IC6005 (MN4094S)
(DELAYED REC TIMING GENERATOR)
DATA
CLOCK
SF/SR
D REC Ⓗ
X6001 (4.19KHz)
INST LED
PAUSE LED
ST-BY LED
POWER LED
REW LED
FF LED
PLAY LED
REC LED
LED DRIVE
OSC2
OSCI
XO
XI
P133
P132
P131
P13Ø
KEY SCAN OUTPUT
NON REC DATA
REC DATA
SERIAL CLOCK OUTPUT
SERIAL DATA IN / OUT PUT
TR UP
TR DOWN
TRACKING
SERIAL CLOCK
SERIAL DATA
POWER ON Ⓗ
9V ON
CAM ON
IC 6001
(MN15361VYF)
REC Ⓗ/PB Ⓜ/MEM Ⓛ
REV Ⓗ/FWD Ⓜ/STOP Ⓛ
SP Ⓗ
EE Ⓗ/VV Ⓛ
CYL ON Ⓗ
CTL DUTY Ø
VREF 2
SNS LED
RE
A.D.REC
V.D.REC
V DOWN
POWER SW
S PHOTO
T PHOTO
OUT/AWT/IN
DEW SENSOR IN
REEL PULSE IN
KEY SCAN INPUT
PGØ
PGI
PG2
PG3
PIØ
PI1
PI2
VCC
PLAY
SHUTTER SPEED CHANGE
SHUTT1
SHUTT2
VREF1
+B
Q6002
QR6025 (POWER ON Ⓗ : ON)
IC6004 (M54543L) (LOADING MOTOR DRIVE)
LOADING MOTOR DRIVE
+9V
EJECT
STOP
SUB LOAD
PRE PAUSE
P6009
POS(1)
POS(2)
POS(3)
MODE SELECT SWITCH
QR6004
(POWER OFF :

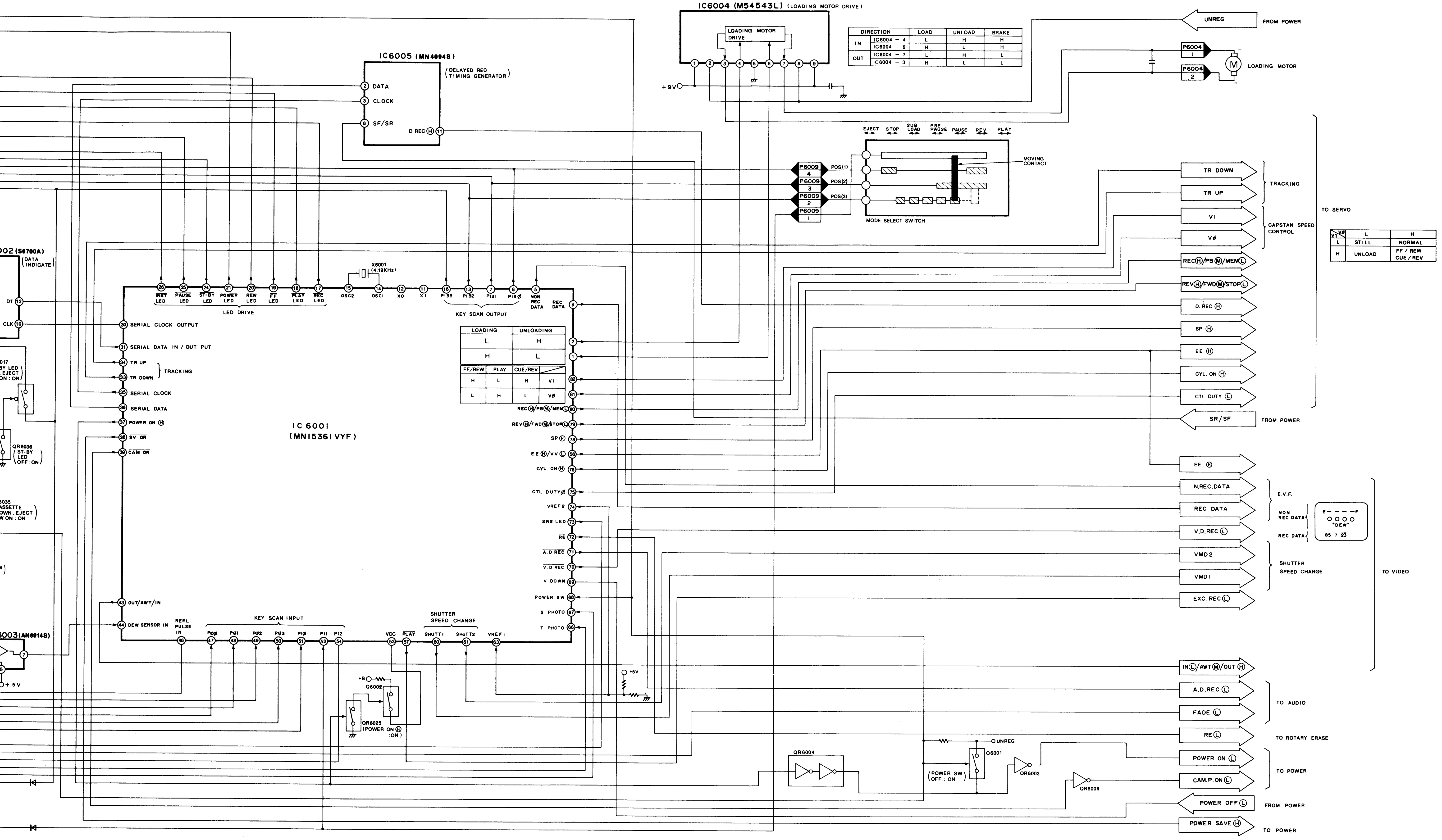
SCAN PULSE

OUT \ IN	PIN 47	PIN 48	PIN 49	PIN 50	PIN 51
PIN 6	STOP	PLAY	MEMORY	STAND-BY	START/ STOP
PIN 7	REW	REC	CLEAR	SHUTTER	REC REVERSE
PIN 13	FF	PAUSE	TRACK-ING UP	—	DATA
PIN 16	CAMERA/ VTR	INSERT	TRACK-ING UP	—	—

DIRECTION		LOAD
IN	IC6004 − 4	L
	IC6004 − 6	H
OUT	IC6004 − 7	L
	IC6004 − 3	H

LOADING	UNLOADING
L	H
H	L

FF/REW	PLAY	CUE/REV	
H	L	H	V1
L	H	L	VØ


IC6004 (M54543L) (LOADING MOTOR DRIVE)
LOADING MOTOR DRIVE
+9V
UNREG
FROM POWER
P6004 1
P6004 2
M
LOADING MOTOR
IC6005 (MN4094S)
(DELAYED REC TIMING GENERATOR)
DATA
CLOCK
SF/SR
D REC Ⓗ
EJECT
STOP
SUB LOAD
PRE PAUSE
PAUSE
REV
PLAY
MOVING CONTACT
P6009 4
P6009 3
P6009 2
P6009 1
POS(1)
POS(2)
POS(3)
MODE SELECT SWITCH
TR DOWN
TR UP
TRACKING
V1
VØ
CAPSTAN SPEED CONTROL
TO SERVO
REC Ⓗ/PB Ⓜ/MEM Ⓛ
REV Ⓗ/FWD Ⓜ/STOP Ⓛ
D. REC Ⓗ
SP Ⓗ
EE Ⓗ
CYL. ON Ⓗ
CTL. DUTY Ⓛ
SR/SF
FROM POWER
EE Ⓗ
N.REC.DATA
REC DATA
V.D.REC Ⓛ
VMD 2
VMD 1
EXC. REC Ⓛ
E.V.F.
NON REC DATA
REC DATA
E - - - F
"DEW"
85 7 23
SHUTTER SPEED CHANGE
TO VIDEO
IN Ⓛ/AWT Ⓜ/OUT Ⓗ
A.D.REC Ⓛ
FADE Ⓛ
TO AUDIO
RE Ⓛ
TO ROTARY ERASE
POWER ON Ⓛ
CAM.P.ON Ⓛ
TO POWER
POWER OFF Ⓛ
FROM POWER
POWER SAVE Ⓗ
TO POWER
UNREG
Q6001
QR6003
QR6009
QR6004
(POWER SW OFF : ON)
002 (S6700A)
(DATA INDICATE)
DT
CLK
017
BY LED
EJECT
ON : ON
QR6036
ST-BY LED
(OFF : ON)
6035
ASSETTE
OWN, EJECT
W ON : ON
003 (AN6914S)
+5V
IC 6001
(MN15361 VYF)
INST LED
PAUSE LED
ST-BY LED
POWER LED
REW LED
FF LED
PLAY LED
REC LED
LED DRIVE
X6001 (4.19KHz)
OSC2
OSCI
XO
XI
P133
P132
P131
P13Ø
KEY SCAN OUTPUT
NON REC DATA
REC DATA
SERIAL CLOCK OUTPUT
SERIAL DATA IN / OUT PUT
TR UP
TR DOWN
TRACKING
SERIAL CLOCK
SERIAL DATA
POWER ON Ⓗ
9V ON
CAM ON
OUT/AWT/IN
DEW SENSOR IN
REEL PULSE IN
KEY SCAN INPUT
PØØ
PØ1
PØ2
PØ3
P1Ø
P11
P12
VCC
PLAY
SHUTTER SPEED CHANGE
SHUTT1
SHUTT2
VREF1
REC Ⓗ/PB Ⓜ/MEM Ⓛ
REV Ⓗ/FWD Ⓜ/STOP Ⓛ
SP Ⓗ
EE Ⓗ/VV Ⓛ
CYL ON Ⓗ
CTL DUTYØ
VREF2
SNS LED
RE
A.D.REC
V.D.REC
V DOWN
POWER SW
S PHOTO
T PHOTO
+B
Q6002
QR6025
(POWER ON Ⓗ :ON)
+5V

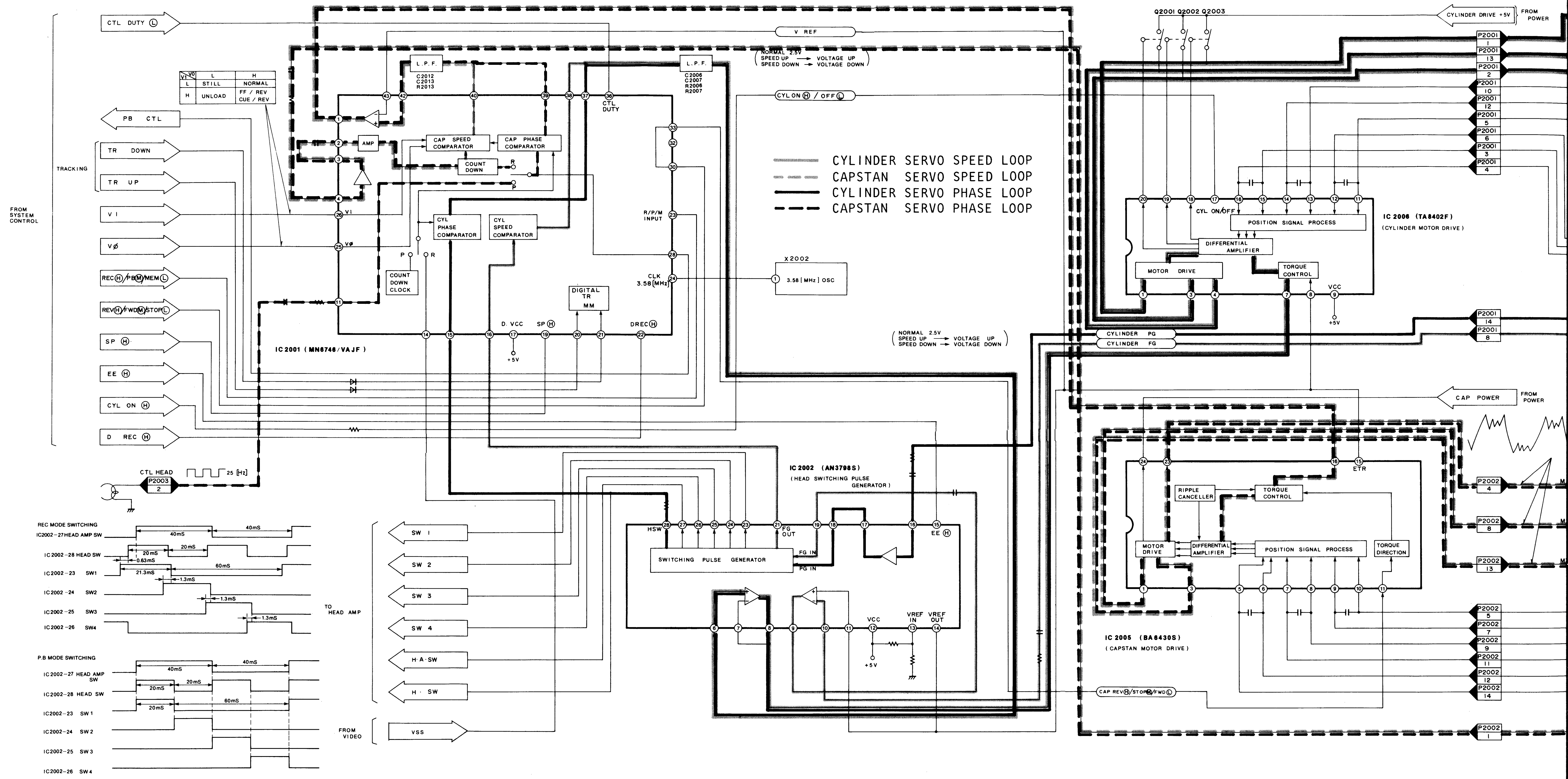
DIRECTION		LOAD	UNLOAD	BRAKE
IN	IC6004 − 4	L	H	H
	IC6004 − 6	H	L	H
OUT	IC6004 − 7	L	H	L
	IC6004 − 3	H	L	L

LOADING	UNLOADING
L	H
H	L

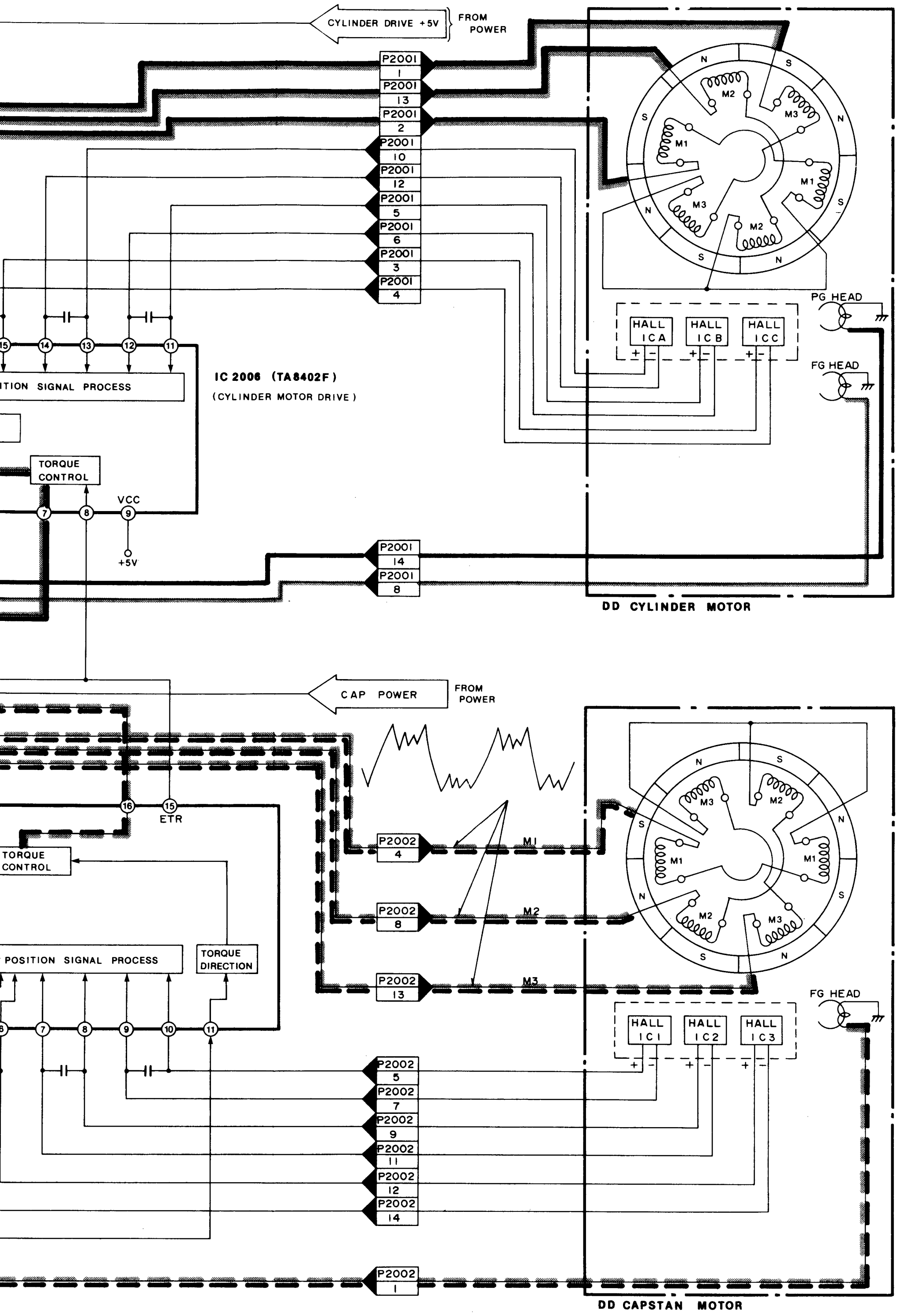
FF/REW	PLAY	CUE/REV	
H	L	H	V1
L	H	L	VØ

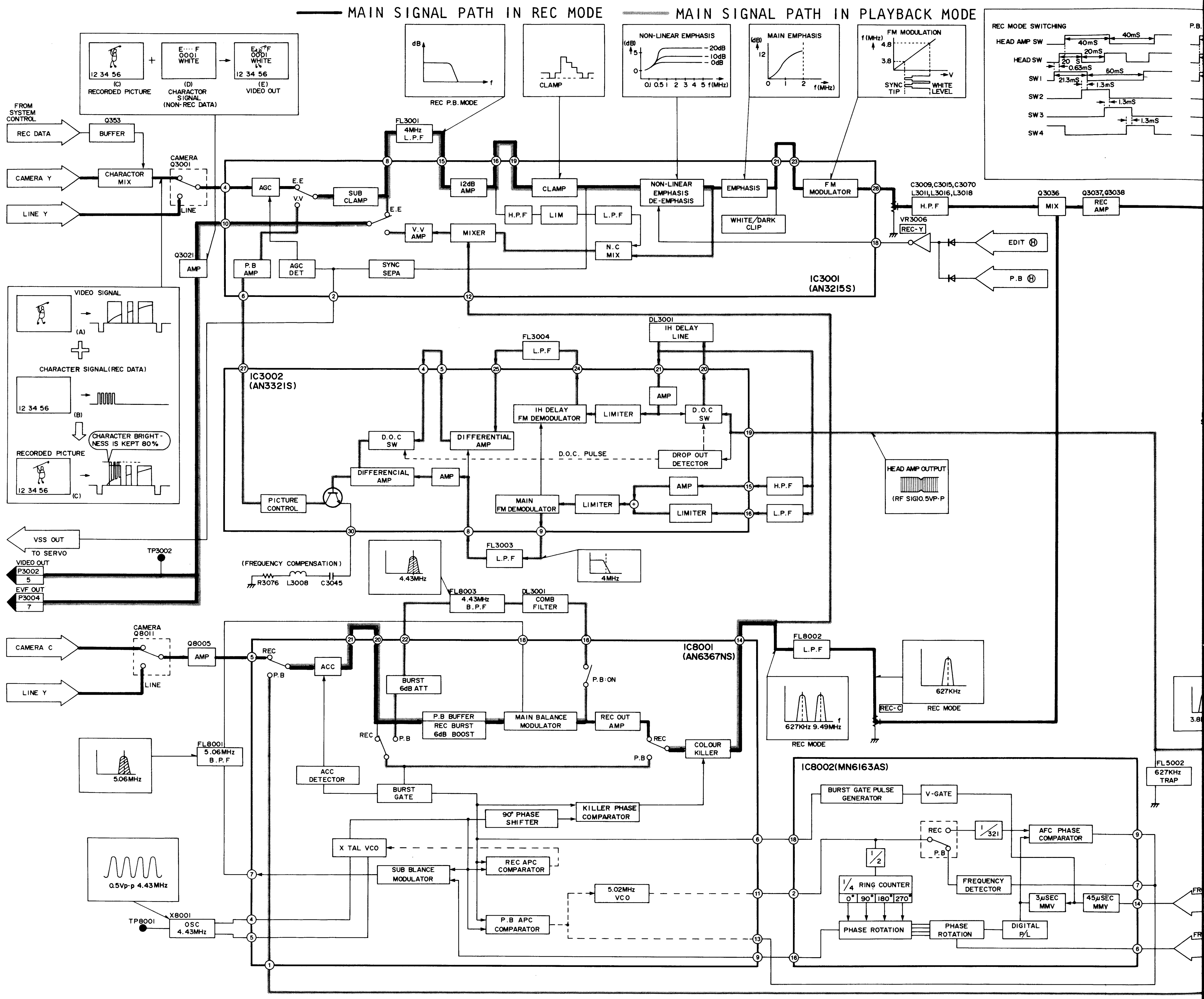
V1 \ VØ	L	H
L	STILL	NORMAL
H	UNLOAD	FF / REW CUE / REV

3-4. SERVO BLOCK DIAGRAM

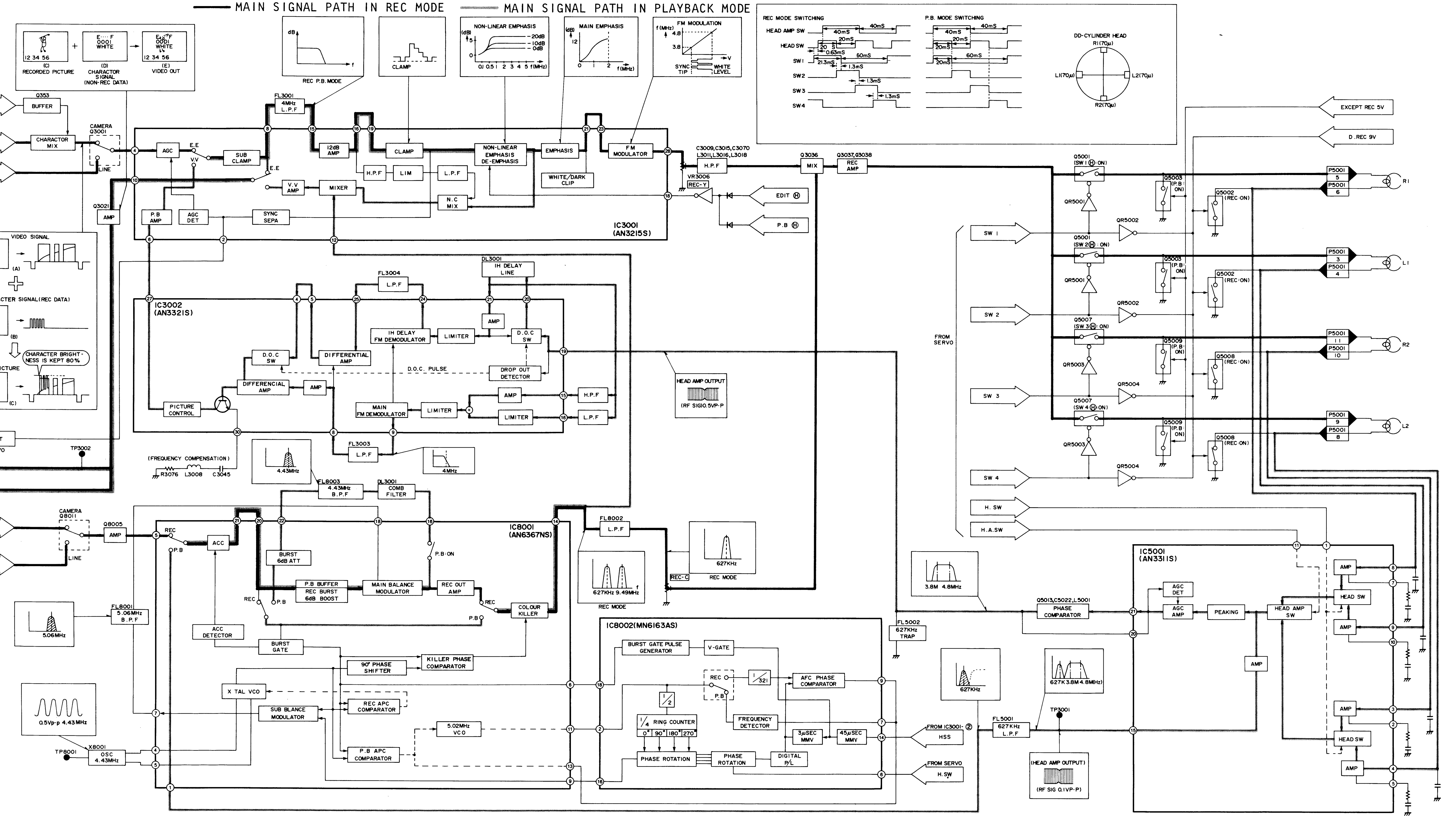

CTL DUTY Ⓛ
PB CTL
TR DOWN
TR UP
TRACKING
FROM SYSTEM CONTROL
VI
VØ
REC(H)/PB(M)/MEM(L)
REV(H)/FWD(M)/STOP(L)
SP Ⓗ
EE Ⓗ
CYL ON Ⓗ
D REC Ⓗ
V1 V0 L H
L STILL NORMAL
H UNLOAD FF / REV CUE / REV
V REF
L.P.F. C2012 C2013 R2013
L.P.F. C2006 C2007 R2006 R2007
NORMAL 2.5V SPEED UP → VOLTAGE UP SPEED DOWN → VOLTAGE DOWN
CYL ON Ⓗ / OFF Ⓛ
AMP
CAP SPEED COMPARATOR
CAP PHASE COMPARATOR
COUNT DOWN
CYL PHASE COMPARATOR
CYL SPEED COMPARATOR
COUNT DOWN CLOCK
DIGITAL TR MM
CTL DUTY
R/P/M INPUT
CLK 3.58 [MHz]
D. VCC
SP Ⓗ
DREC Ⓗ
+5V
IC 2001 (MN6746/VAJF)
CYLINDER SERVO SPEED LOOP
CAPSTAN SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP
CAPSTAN SERVO PHASE LOOP
X2002
3.58 [MHz] OSC
CTL HEAD
P2003 2
25 [Hz]
IC 2002 (AN3798S) (HEAD SWITCHING PULSE GENERATOR)
HSW
FG OUT
FG IN
PG IN
EE Ⓗ
SWITCHING PULSE GENERATOR
VCC
VREF IN
VREF OUT
SW 1
SW 2
SW 3
SW 4
H·A·SW
H·SW
TO HEAD AMP
FROM VIDEO
VSS
REC MODE SWITCHING
IC2002-27 HEAD AMP SW
IC2002-28 HEAD SW
IC2002-23 SW1
IC2002-24 SW2
IC2002-25 SW3
IC2002-26 SW4
40mS
20mS
0.63mS
21.3mS
60mS
1.3mS
P.B MODE SWITCHING
IC2002-27 HEAD AMP SW
IC2002-28 HEAD SW
IC2002-23 SW 1
IC2002-24 SW 2
IC2002-25 SW 3
IC2002-26 SW 4
Q2001 Q2002 Q2003
CYLINDER DRIVE +5V
FROM POWER
P2001 1
P2001 13
P2001 2
P2001 10
P2001 12
P2001 5
P2001 6
P2001 3
P2001 4
CYL ON/OFF
POSITION SIGNAL PROCESS
DIFFERENTIAL AMPLIFIER
MOTOR DRIVE
TORQUE CONTROL
VCC
+5V
IC 2006 (TA8402F) (CYLINDER MOTOR DRIVE)
P2001 14
P2001 8
CYLINDER PG
CYLINDER FG
NORMAL 2.5V SPEED UP → VOLTAGE UP SPEED DOWN → VOLTAGE DOWN
CAP POWER
FROM POWER
ETR
RIPPLE CANCELLER
TORQUE CONTROL
MOTOR DRIVE
DIFFERENTIAL AMPLIFIER
POSITION SIGNAL PROCESS
TORQUE DIRECTION
IC 2005 (BA6430S) (CAPSTAN MOTOR DRIVE)
P2002 4
P2002 8
P2002 13
P2002 5
P2002 7
P2002 9
P2002 11
P2002 12
P2002 14
P2002 1
CAP REV(H)/STOP(M)/FWD(L)

3-5. LUMINANCE & CHROMINANCE BLOCK DIAGRAM


CYLINDER DRIVE +5V
FROM POWER
P2001
ITION SIGNAL PROCESS
IC 2006 (TA8402F)
(CYLINDER MOTOR DRIVE)
TORQUE CONTROL
VCC
+5V
HALL ICA
HALL ICB
HALL ICC
PG HEAD
FG HEAD
M1
M2
M3
DD CYLINDER MOTOR
CAP POWER
FROM POWER
ETR
TORQUE CONTROL
POSITION SIGNAL PROCESS
TORQUE DIRECTION
P2002
HALL IC1
HALL IC2
HALL IC3
FG HEAD
DD CAPSTAN MOTOR

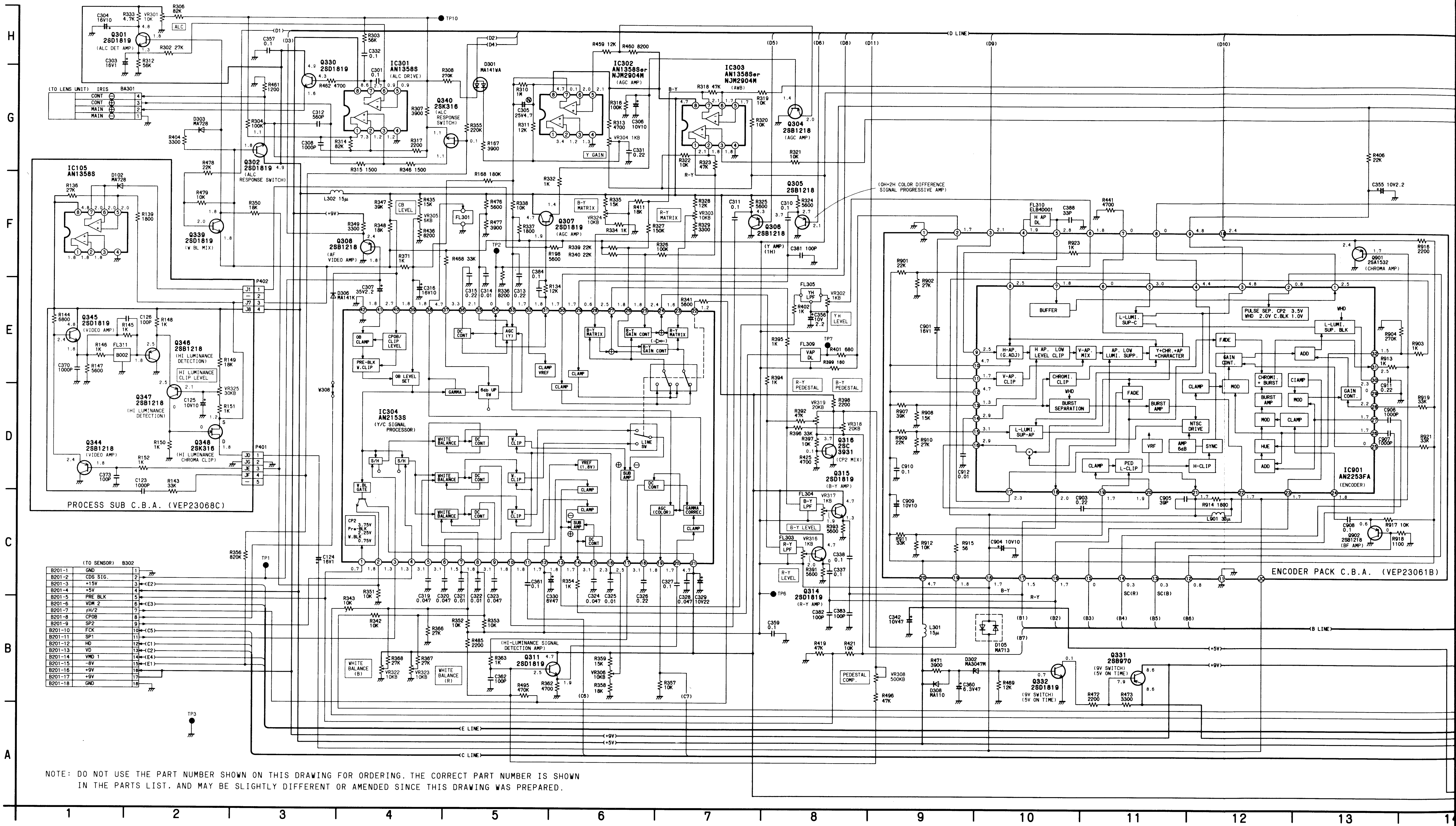

MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
(C) RECORDED PICTURE
(D) CHARACTOR SIGNAL (NON-REC DATA)
(E) VIDEO OUT
REC P.B. MODE
CLAMP
NON-LINEAR EMPHASIS
-20dB
-10dB
-0dB
MAIN EMPHASIS
FM MODULATION
SYNC TIP
WHITE LEVEL
REC MODE SWITCHING
HEAD AMP SW
HEAD SW
SW1
SW2
SW3
SW4
40mS
20mS
0.63mS
60mS
21.3mS
1.3mS
FROM SYSTEM CONTROL
REC DATA
Q353 BUFFER
CAMERA Y
CHARACTOR MIX
CAMERA Q3001
LINE
LINE Y
E.E
V.V
AGC
SUB CLAMP
FL3001 4MHz L.P.F
12dB AMP
H.P.F
LIM
L.P.F
NON-LINEAR EMPHASIS DE-EMPHASIS
EMPHASIS
WHITE/DARK CLIP
FM MODULATOR
N.C MIX
V.V AMP
MIXER
Q3021 AMP
P.B AMP
AGC DET
SYNC SEPA
IC3001 (AN3215S)
C3009, C3015, C3070 L3011, L3016, L3018
H.P.F
VR3006 REC-Y
Q3036 MIX
Q3037, Q3038 REC AMP
EDIT H
P.B H
VIDEO SIGNAL
(A)
CHARACTER SIGNAL (REC DATA)
(B)
CHARACTER BRIGHTNESS IS KEPT 80%
RECORDED PICTURE
(C)
IC3002 (AN3321S)
FL3004 L.P.F
DL3001 1H DELAY LINE
1H DELAY FM DEMODULATOR
LIMITER
AMP
D.O.C SW
DIFFERENTIAL AMP
D.O.C PULSE
DROP OUT DETECTOR
HEAD AMP OUTPUT
(RF SIG) 0.5VP-P
PICTURE CONTROL
MAIN FM DEMODULATOR
FL3003 L.P.F
4MHz
VSS OUT
TO SERVO
VIDEO OUT P3002
EVF OUT P3004
TP3002
(FREQUENCY COMPENSATION)
R3076 L3008 C3045
4.43MHz
FL8003 4.43MHz B.P.F
DL3001 COMB FILTER
CAMERA C
CAMERA Q8011
Q8005 AMP
REC
P.B
ACC
IC8001 (AN6367NS)
BURST 6dB ATT
P.B BUFFER REC BURST 6dB BOOST
MAIN BALANCE MODULATOR
REC OUT AMP
P.B ON
COLOUR KILLER
FL8002 L.P.F
627KHz
REC MODE
REC-C
627KHz 9.49MHz
FL8001 5.06MHz B.P.F
5.06MHz
ACC DETECTOR
BURST GATE
90° PHASE SHIFTER
KILLER PHASE COMPARATOR
X TAL VCO
REC APC COMPARATOR
SUB BLANCE MODULATOR
5.02MHz VCO
P.B APC COMPARATOR
0.5Vp-p 4.43MHz
TP8001
X8001 OSC 4.43MHz
IC8002 (MN6163AS)
BURST GATE PULSE GENERATOR
V-GATE
1/321
AFC PHASE COMPARATOR
1/2
1/4 RING COUNTER
0° 90° 180° 270°
FREQUENCY DETECTOR
3μSEC MMV
45μSEC MMV
PHASE ROTATION
DIGITAL P/L
FL5002 627KHz TRAP

UMINANCE & CHROMINANCE BLOCK DIAGRAM


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
(C) RECORDED PICTURE
(D) CHARACTER SIGNAL (NON-REC DATA)
(E) VIDEO OUT
REC P.B. MODE
CLAMP
NON-LINEAR EMPHASIS
MAIN EMPHASIS
FM MODULATION
SYNC TIP
WHITE LEVEL
REC MODE SWITCHING
P.B. MODE SWITCHING
HEAD AMP SW
HEAD SW
SW1
SW2
SW3
SW4
40mS
20mS
60mS
0.63mS
21.3mS
1.3mS
DD-CYLINDER HEAD
R1(70μ)
L1(70μ)
L2(70μ)
R2(70μ)
Q353
BUFFER
CHARACTOR MIX
CAMERA Q3001
LINE
Q3021
AMP
AGC
E.E
V.V
SUB CLAMP
FL3001
4MHz L.P.F
12dB AMP
H.P.F
LIM
L.P.F
N.C MIX
NON-LINEAR EMPHASIS DE-EMPHASIS
EMPHASIS
WHITE/DARK CLIP
FM MODULATOR
V.V AMP
MIXER
P.B AMP
AGC DET
SYNC SEPA
IC3001 (AN3215S)
C3009, C3015, C3070
L3011, L3016, L3018
VR3006
REC-Y
EDIT Ⓗ
P.B Ⓗ
Q3036
MIX
Q3037, Q3038
REC AMP
EXCEPT REC 5V
D.REC 9V
VIDEO SIGNAL
CHARACTER SIGNAL (REC DATA)
CHARACTER BRIGHTNESS IS KEPT 80%
IC3002 (AN3321S)
FL3004
DL3001
1H DELAY LINE
1H DELAY FM DEMODULATOR
LIMITER
D.O.C SW
DIFFERENTIAL AMP
D.O.C PULSE
DROP OUT DETECTOR
DIFFERENCIAL AMP
PICTURE CONTROL
MAIN FM DEMODULATOR
FL3003
(FREQUENCY COMPENSATION)
R3076
L3008
C3045
TP3002
HEAD AMP OUTPUT
(RF SIG 0.5VP-P)
4.43MHz
4MHz
FL8003
4.43MHz B.P.F
COMB FILTER
CAMERA Q8011
Q8005
ACC
BURST 6dB ATT
P.B BUFFER REC BURST 6dB BOOST
MAIN BALANCE MODULATOR
REC OUT AMP
P.B ON
COLOUR KILLER
IC8001 (AN6367NS)
FL8002
627KHz
REC MODE
627KHz 9.49MHz
REC-C
FL8001
5.06MHz B.P.F
5.06MHz
ACC DETECTOR
BURST GATE
90° PHASE SHIFTER
KILLER PHASE COMPARATOR
X TAL VCO
SUB BLANCE MODULATOR
REC APC COMPARATOR
5.02MHz VCO
P.B APC COMPARATOR
0.5Vp-p 4.43MHz
TP8001
X8001
OSC 4.43MHz
IC8002 (MN6163AS)
BURST GATE PULSE GENERATOR
V-GATE
1/321
AFC PHASE COMPARATOR
1/2
1/4 RING COUNTER
0° 90° 180° 270°
PHASE ROTATION
FREQUENCY DETECTOR
3μSEC MMV
45μSEC MMV
DIGITAL P/L
FL5002
627KHz TRAP
3.8M 4.8MHz
627KHz
627K 3.8M 4.8MHz
FROM IC3001-②
HSS
FROM SERVO
H.SW
FL5001
627KHz L.P.F
TP5001
(HEAD AMP OUTPUT)
(RF SIG 0.1VP-P)
Q5013, C5022, L5001
PHASE COMPARATOR
IC5001 (AN3311S)
AGC DET
AGC AMP
PEAKING
HEAD AMP SW
HEAD SW
Q5001 (SW1 Ⓗ ON)
Q5001 (SW2 Ⓗ ON)
Q5007 (SW3 Ⓗ ON)
Q5007 (SW4 Ⓗ ON)
QR5001
QR5002
QR5003
QR5004
Q5003 (P.B ON)
Q5009 (P.B ON)
Q5002 (REC ON)
Q5008 (REC ON)
P5001
SW1
SW2
SW3
SW4
H.SW
H.A.SW
FROM SERVO
R1
L1
R2
L2

Next Page:
PROCESS, SUB PROCESS & ENCODER Section

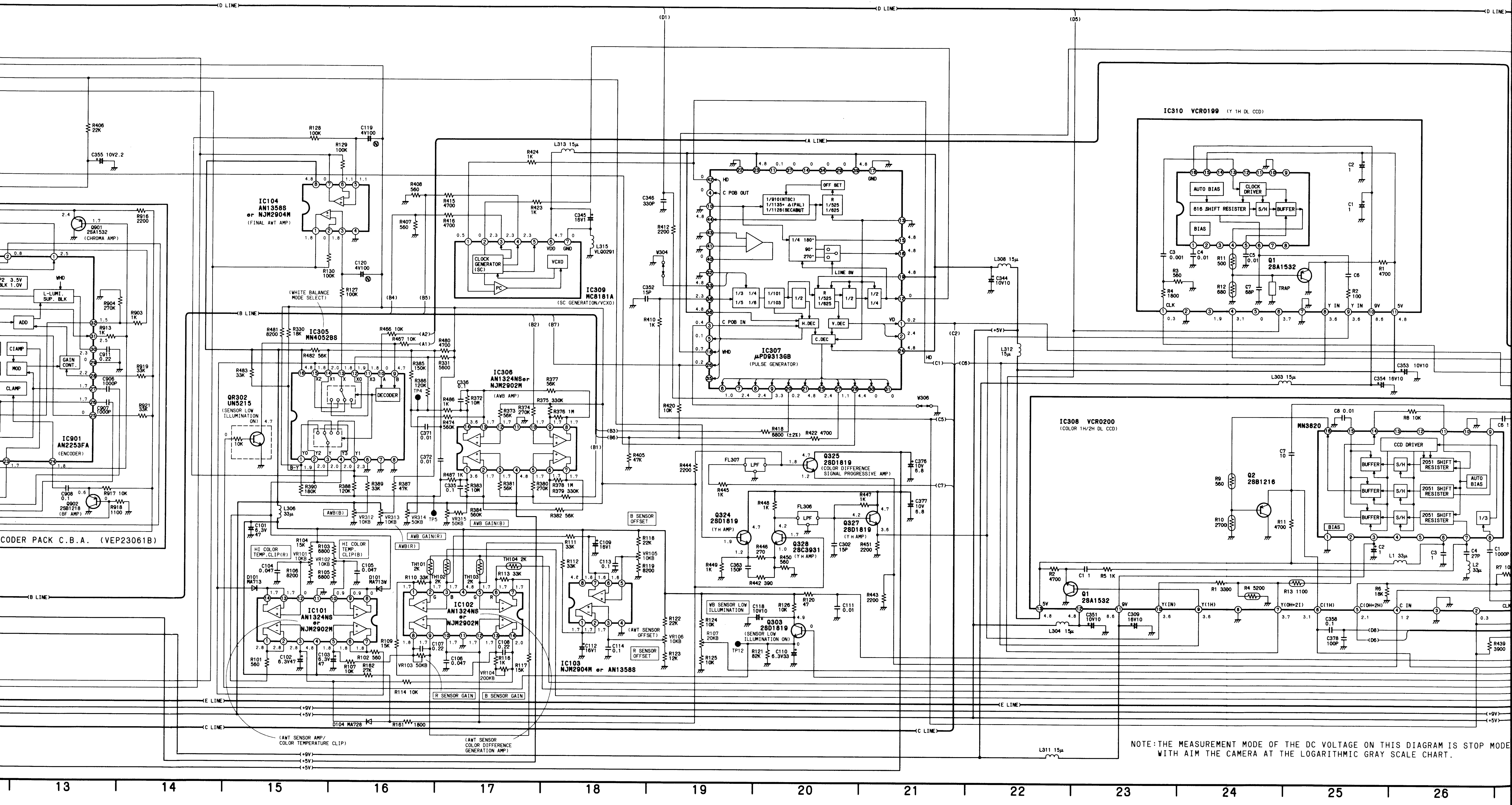
3-6. PROCESS, SUB PROCESS & ENCODER SCHEMATIC DIAGRAM



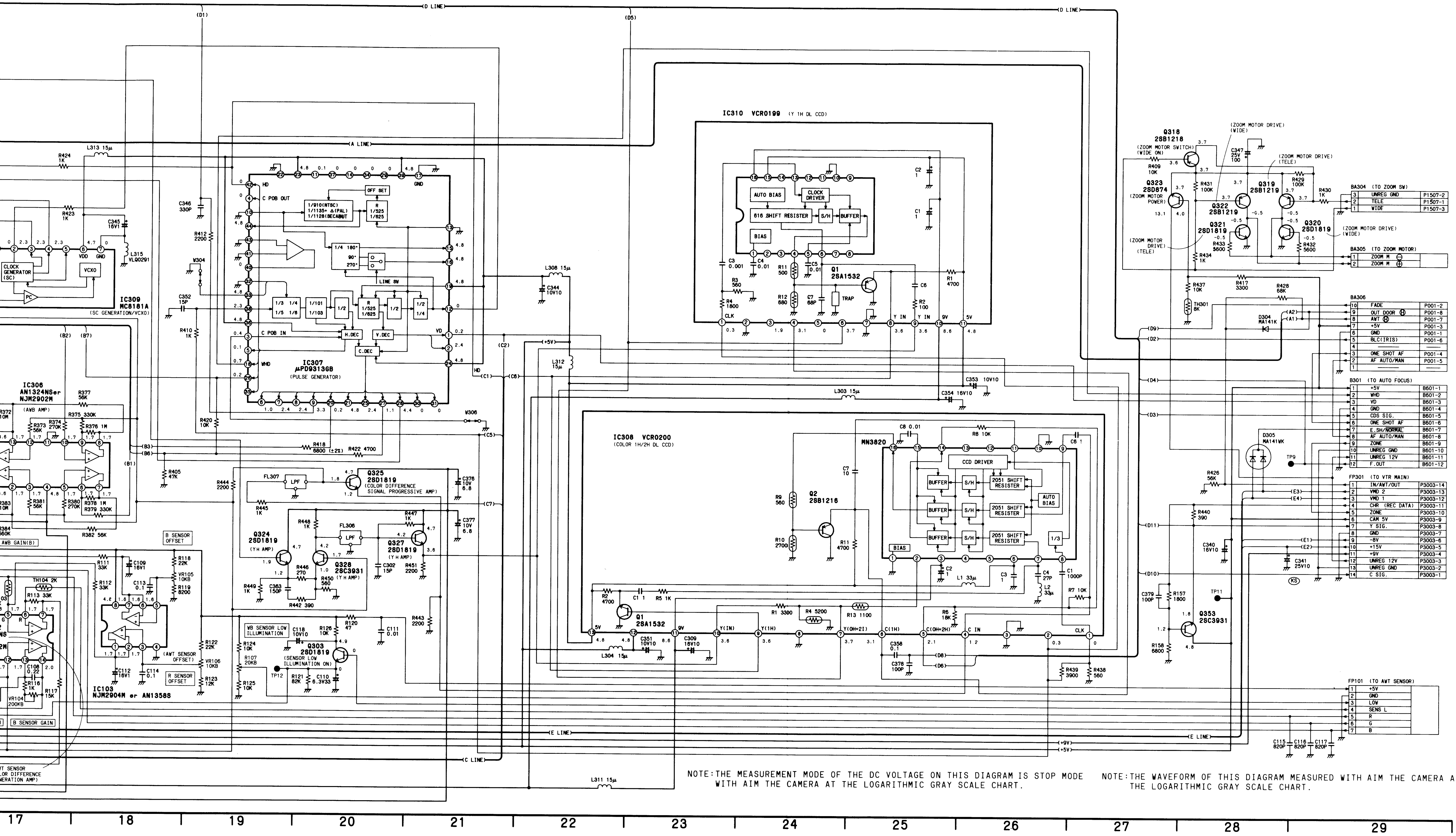
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
Q301 2SD1819 (ALC DET AMP)
ALC
TP10
(TO LENS UNIT) IRIS BA301
CONT ⊖
CONT ⊕
MAIN ⊕
MAIN ⊖
Q330 2SD1819
IC301 AN1358S (ALC DRIVE)
Q340 2SK316 (ALC RESPONSE SWITCH)
D301 MA141WA
Q302 2SD1819 (ALC RESPONSE SWITCH)
IC302 AN1358Ser NJM2904M (AGC AMP)
Y GAIN
IC303 AN1358Ser NJM2904M (AWB)
Q304 2SB1218 (AGC AMP)
Q305 2SB1218
Q306 2SB1218 (Y AMP) (1H)
(0H+2H COLOR DIFFERENCE SIGNAL PROGRESSIVE AMP)
D LINE
IC105 AN1358S
Q339 2SD1819 (W BL MIX)
P402
Q308 2SB1218 (AF VIDEO AMP)
Q307 2SD1819 (AGC AMP)
CB LEVEL
FL301
B-Y MATRIX
R-Y MATRIX
TP2
IC304 AN2153S (Y/C SIGNAL PROCESSOR)
OB CLAMP
CPOB/CLIP LEVEL
PRE-BLK W.CLIP
OB LEVEL SET
GAMMA
6db UP SW
DC CONT
AGC (Y)
CLAMP VREF
CLAMP
B-Y MATRIX
B-Y GAIN CONT
R-Y MATRIX
R-Y GAIN CONT
S/H
W.BL GATE
WHITE BALANCE
W.CLIP
VREF (1.8V)
LINE SW
SUB AMP
AGC (COLOR)
GAMMA CORREC
CP2 3.75V Pre-BLK 2.25V W.BLK 0.75V
Q345 2SD1819 (VIDEO AMP)
Q346 2SB1218 (HI LUMINANCE DETECTION)
HI LUMINANCE CLIP LEVEL
Q347 2SB1218 (HI LUMINANCE DETECTION)
Q344 2SB1218 (VIDEO AMP)
Q348 2SK316 (HI LUMINANCE CHROMA CLIP)
P401
PROCESS SUB C.B.A. (VEP23068C)
FL305 YH LPF
YH LEVEL
FL309 VAP DL
TP7
R-Y PEDESTAL
B-Y PEDESTAL
Q316 2SC3931 (CP2 MIX)
Q315 2SD1819 (B-Y AMP)
FL304 B-Y LPF
B-Y LEVEL
FL303 R-Y LPF
R-Y LEVEL
Q314 2SD1819 (R-Y AMP)
TP6
TP1
(TO SENSOR) B302
WHITE BALANCE (B)
WHITE BALANCE (R)
Q311 2SD1819 (HI-LUMINANCE SIGNAL DETECTION AMP)
PEDESTAL COMP.
D302 MA3047M
D308 MA110
D105 MA713
Q332 2SD1819 (9V SWITCH) (5V ON TIME)
Q331 2SB970 (9V SWITCH) (5V ON TIME)
FL310 ELB40001 H AP DL
BUFFER
PULSE SEP. CP2 3.5V WHD 2.0V C.BLK 1.0V
L-LUMI. SUP-C
L-LUMI. SUP. BLK
H-AP. (G.ADJ)
H AP. LOW LEVEL CLIP
V-AP. MIX
AP. LOW LUMI. SUPP.
Y+CHR.+AP +CHARACTER
FADE
GAIN CONT.
ADD
V-AP. CLIP
CHROMI. CLIP
WHD
BURST SEPARATION
BURST AMP
NTSC DRIVE
CLAMP
MOD
CHROMI. + BURST
L-LUMI. SUP-AP
VRF
AMP 6dB
SYNC
HUE
PED L-CLIP
H-CLIP
IC901 AN2253FA (ENCODER)
Q901 2SA1532 (CHROMA AMP)
Q902 2SB1218 (BF AMP)
ENCODER PACK C.B.A. (VEP23061B)
SC(R)
SC(B)
B-Y
R-Y
B LINE
(+5V)
(+9V)
E LINE
C LINE
TP3

B201-1	GND	1
B201-2	CDS SIG.	2
B201-3	+15V	3
B201-4	+5V	4
B201-5	PRE BLK	5
B201-6	VDM 2	6
B201-7	fH/2	7
B201-8	CPOB	8
B201-9	SP2	9
B201-10	FCK	10
B201-11	SP1	11
B201-12	HD	12
B201-13	VD	13
B201-14	VMD 1	14
B201-15	-8V	15
B201-16	+9V	16
B201-17	+9V	17
B201-18	GND	18

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST. AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.


D LINE
A LINE
B LINE
C LINE
E LINE
IC104 AN1358S or NJM2904M (FINAL AWT AMP)
Q901 2SA1532 (CHROMA AMP)
IC901 AN2253FA (ENCODER)
Q902 2SB1218 (BF AMP)
CODER PACK C.B.A. (VEP23061B)
L-LUMI. SUP. BLK
ADD
CLAMP
MOD
GAIN CONT.
IC305 MN4052BS
(WHITE BALANCE MODE SELECT)
DECODER
QR302 UN5215 (SENSOR LOW ILLUMINATION ON)
IC309 MC8181A (SC GENERATION/VCXO)
CLOCK GENERATOR (SC)
VCXO
PC
IC306 AN1324NS or NJM2902M (AWB AMP)
TP4
TP5
AWB(B)
AWB GAIN(R)
AWB(R)
AWB GAIN(B)
IC101 AN1324NS or NJM2902M
HI COLOR TEMP.CLIP(R)
HI COLOR TEMP. CLIP(B)
IC102 AN1324NS or NJM2902M
R SENSOR GAIN
B SENSOR GAIN
(AWT SENSOR AMP/ COLOR TEMPERATURE CLIP)
(AWT SENSOR COLOR DIFFERENCE GENERATION AMP)
IC103 NJM2904M or AN1358S
B SENSOR OFFSET
R SENSOR OFFSET
(AWT SENSOR OFFSET)
IC307 μPD93136B (PULSE GENERATOR)
C POB OUT
C POB IN
WHD
HD
VD
OFF SET
1/910(NTSC) 1/1135+Δ(PAL) 1/1128(SECAM)OUT
1/4 180° 90° 270°
LINE 8V
H.DEC
V.DEC
C.DEC
Q325 2SD1819 (COLOR DIFFERENCE SIGNAL PROGRESSIVE AMP)
FL307 LPF
Q324 2SD1819 (Y H AMP)
Q328 2SC3931 (Y H AMP)
Q327 2SD1819 (Y H AMP)
FL306 LPF
WB SENSOR LOW ILLUMINATION
Q303 2SD1819 (SENSOR LOW ILLUMINATION ON)
TP12
IC310 VCR0199 (Y 1H DL CCD)
AUTO BIAS
CLOCK DRIVER
616 SHIFT RESISTER
S/H
BUFFER
BIAS
Q1 2SA1532
TRAP
CLK
Y IN
IC308 VCR0200 (COLOR 1H/2H DL CCD)
MN3820
CCD DRIVER
2051 SHIFT RESISTER
AUTO BIAS
Q2 2SB1216
Q1 2SA1532
1/3
Y(1H)
Y(0H+2H)
C(1H)
C(0H+2H)
C IN
(+9V)
(+5V)
13
14
15
16
17
18
19
20
21
22
23
24
25
26

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE
WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

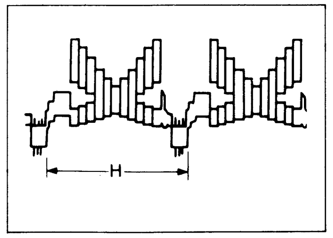

D LINE
A LINE
C LINE
E LINE
IC309
MC6161A
(SC GENERATION/VCXO)
CLOCK GENERATOR (SC)
VCXO
PC
L315 VL00291
IC307
μPD931368
(PULSE GENERATOR)
OFF SET
1/910(NTSC)
1/1135+ Δ(PAL)
1/1128(SECAM)
R 1/525 1/625
1/4 180°
90°
270°
LINE 8W
1/3 1/4
1/5 1/6
1/101
1/103
1/2
H.DEC
V.DEC
C.DEC
C POB OUT
C POB IN
HD
VD
WHD
GND
IC306
AN1324NSor NJM2902M
(AWB AMP)
Q325
2SD1819
(COLOR DIFFERENCE SIGNAL PROGRESSIVE AMP)
FL307
FL306
LPF
Q324
2SD1819
(YH AMP)
Q326
2SC3931
(YH AMP)
Q327
2SD1819
(YH AMP)
B SENSOR OFFSET
R SENSOR OFFSET
(AWT SENSOR OFFSET)
WB SENSOR LOW ILLUMINATION
Q303
2SD1819
(SENSOR LOW ILLUMINATION ON)
TP12
IC103
NJM2904M or AN1358S
TH104 2K
B SENSOR GAIN
AWB GAIN(B)
IC310 VCR0199 (Y 1H DL CCD)
AUTO BIAS
CLOCK DRIVER
616 SHIFT RESISTER
S/H
BUFFER
BIAS
TRAP
Q1
2SA1532
CLK
Y IN
9V
5V
IC308 VCR0200
(COLOR 1H/2H DL CCD)
MN3820
CCD DRIVER
2051 SHIFT RESISTER
AUTO BIAS
1/3
Q2
2SB1216
Y(IN)
Y(1H)
Y(0H+2I)
C(1H)
C(0H+2H)
C IN
Q318
2SB1218
(ZOOM MOTOR SWITCH) (WIDE ON)
Q323
2SD874
(ZOOM MOTOR POWER)
Q322
2SB1219
Q319
2SB1219
Q321
2SD1819
Q320
2SD1819
(ZOOM MOTOR DRIVE) (WIDE)
(ZOOM MOTOR DRIVE) (TELE)
BA304 (TO ZOOM SW)
UNREG GND P1507-2
TELE P1507-1
WIDE P1507-3
BA305 (TO ZOOM MOTOR)
ZOOM M ⊖
ZOOM M ⊕
TH301 8K
D304 MA141K
BA306
FADE P001-2
OUT DOOR P001-8
AWT P001-7
+5V P001-3
GND P001-1
BLC(IRIS) P001-6
ONE SHOT AF P001-4
AF AUTO/MAN P001-5
B301 (TO AUTO FOCUS)
+5V B601-1
WHD B601-2
VD B601-3
GND B601-4
CDS SIG. B601-5
ONE SHOT AF B601-6
E.SH/NORMAL B601-7
AF AUTO/MAN B601-8
ZONE B601-9
UNREG GND B601-10
UNREG 12V B601-11
F.OUT B601-12
D305 MA141WK
TP9
FP301 (TO VTR MAIN)
IN/AWT/OUT P3003-14
VMD 2 P3003-13
VMD 1 P3003-12
CHR (REC DATA) P3003-11
ZONE P3003-10
CAM 5V P3003-9
Y SIG. P3003-8
GND P3003-7
-8V P3003-6
+15V P3003-5
+9V P3003-4
UNREG 12V P3003-3
UNREG GND P3003-2
C SIG. P3003-1
TP11
Q353
2SC3931
FP101 (TO AWT SENSOR)
+5V
GND
LOW
SENS L
R
G
B
17
18
19
20
21
22
23
24
25
26
27
28
29

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

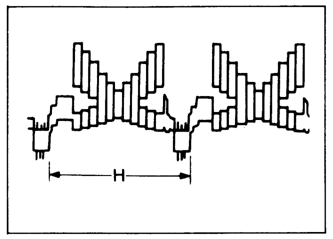
NOTE:THE WAVEFORM OF THIS DIAGRAM MEASURED WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

PROCESS MAIN CIRCUIT TP (Test Point) WAVE FORM (REF No. 300 Series)

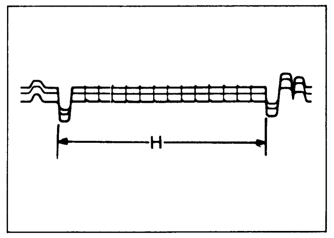
3-7. PROCESS C.B.A. (VEP23063B), SUB PROCESS C.B.A. (VEP23068C) & ENCODER C.B.A. (VEP23061B)



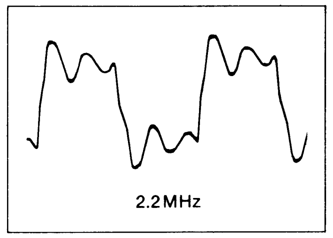
TP301 STOP
0.1V/20μsec. div. 0.35Vp-p



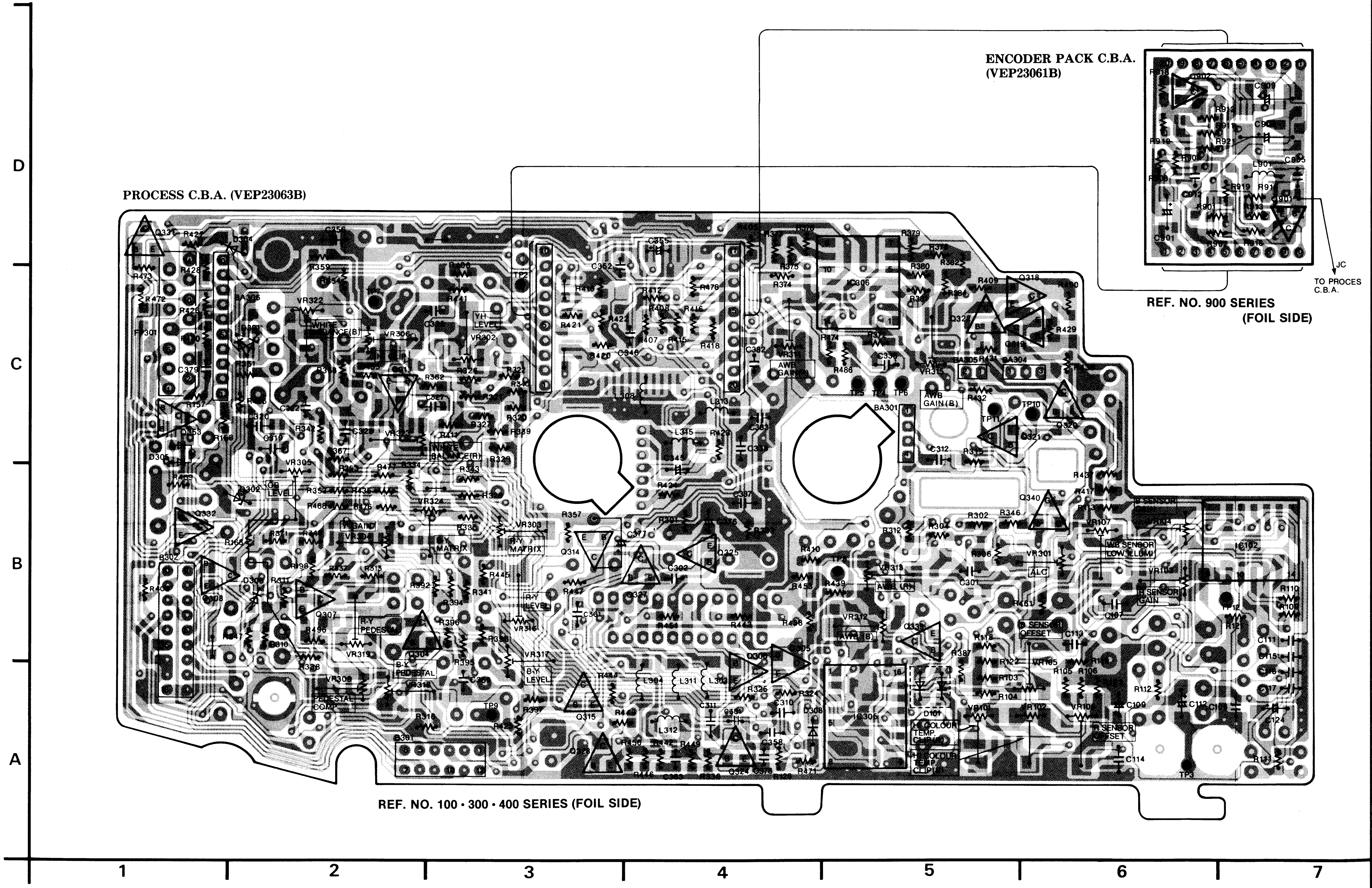
TP302 STOP
0.1V/20μsec. div. 0.3Vp-p

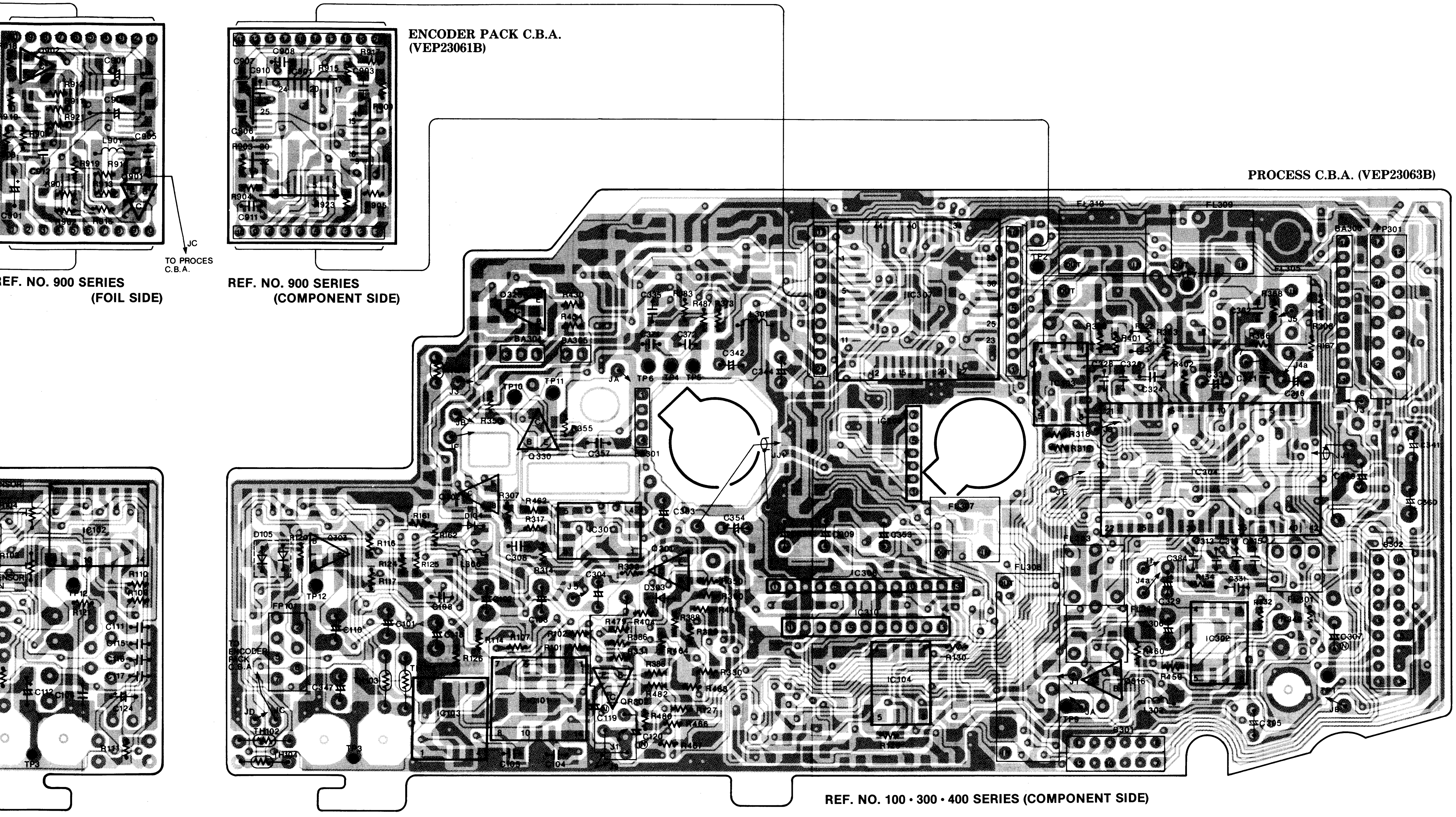


TP307 STOP
50mV/20μsec. div. 50mVp-p



TP308 STOP
0.2V/50μsec. div. 8Vp-p


ENCODER PACK C.B.A.
(VEP23061B)
REF. NO. 900 SERIES
(FOIL SIDE)
JC
TO PROCES
C.B.A.
PROCESS C.B.A. (VEP23063B)
REF. NO. 100 • 300 • 400 SERIES (FOIL SIDE)
D
C
B
A
1
2
3
4
5
6
7
TP1
TP2
TP3
TP4
TP5
TP6
TP9
TP10
TP11
YH LEVEL
WHITE BALANCE(B)
WHITE BALANCE(R)
AWB GAIN(R)
AWB GAIN(B)
AWB (R)
AWB (B)
R-Y MATRIX
B-Y MATRIX
R-Y LEVEL
B-Y LEVEL
R-Y PEDESTAL
B-Y PEDESTAL
PEDESTAL COMP
ALC
WB SENSOR LOW LIGHT
SENSOR GAIN
SENSOR OFFSET
COLOUR TEMP CHANGE
COLOUR TEMP CHANGE


JC
TO PROCES C.B.A.
TO ENCODER PACK C.B.A.
IC301
IC302
IC303
IC304
IC305
IC306
IC307
IC310
Q330
Q345
FL307
FL308
FL309
FL310
TP1
TP2
TP3
TP4
TP5
TP6
TP10
TP11
TP12

ENCODER PACK C.B.A.
(VEP23061B)

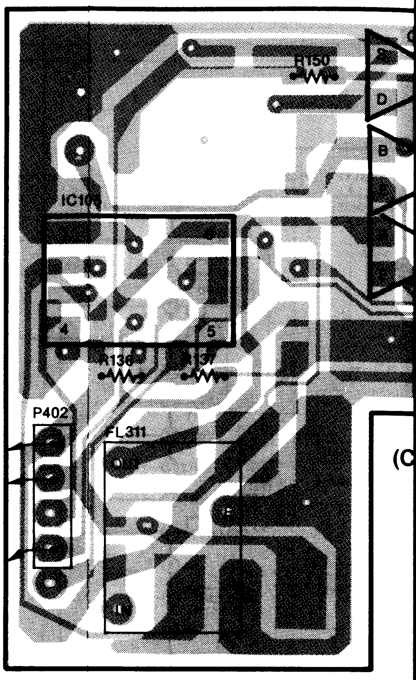
REF. NO. 900 SERIES
(FOIL SIDE)

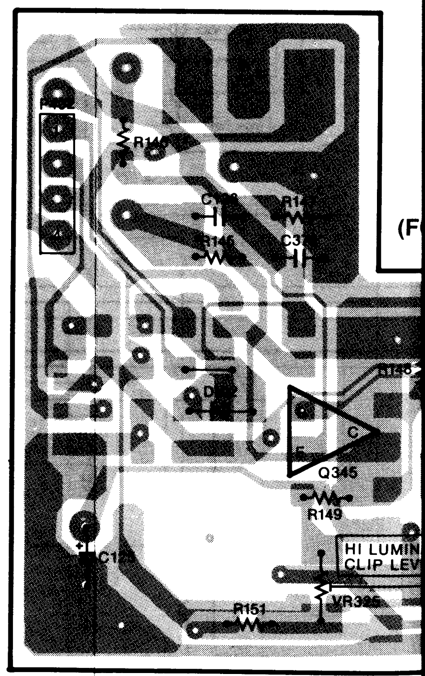
REF. NO. 900 SERIES
(COMPONENT SIDE)

PROCESS C.B.A. (VEP23063B)

REF. NO. 100 • 300 • 400 SERIES (COMPONENT SIDE)

SUB PROCESS C.B.A. (VEP23068C)


R150
IC101
R136
P402
J8
J7
J1
FL311

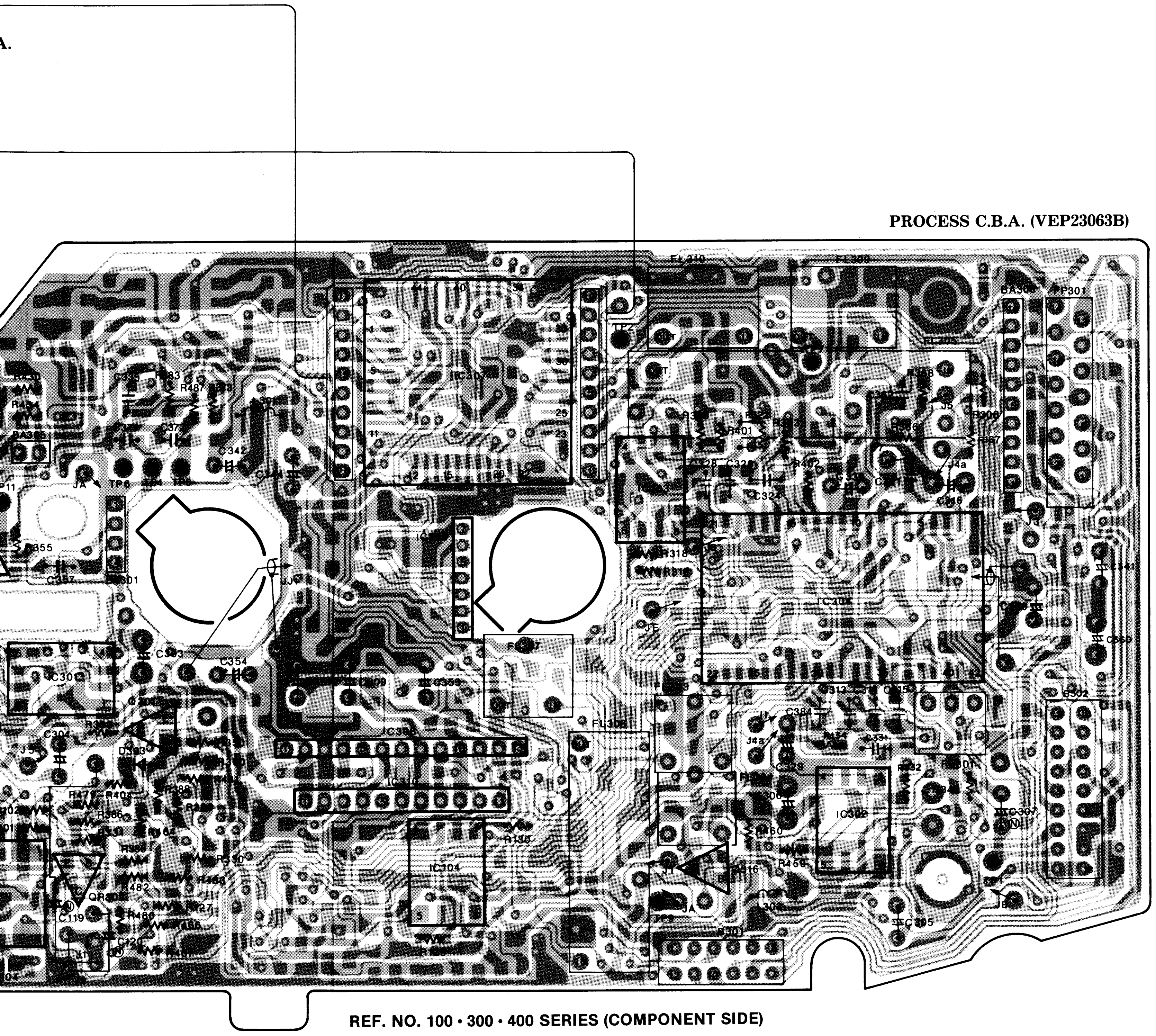

Q345
R149
HI LUMIN
CLIP LEV
VR305
R151

SUB PROCESS C.B.A. (VEP23068C)

7
8
9
10
11
12
13
14

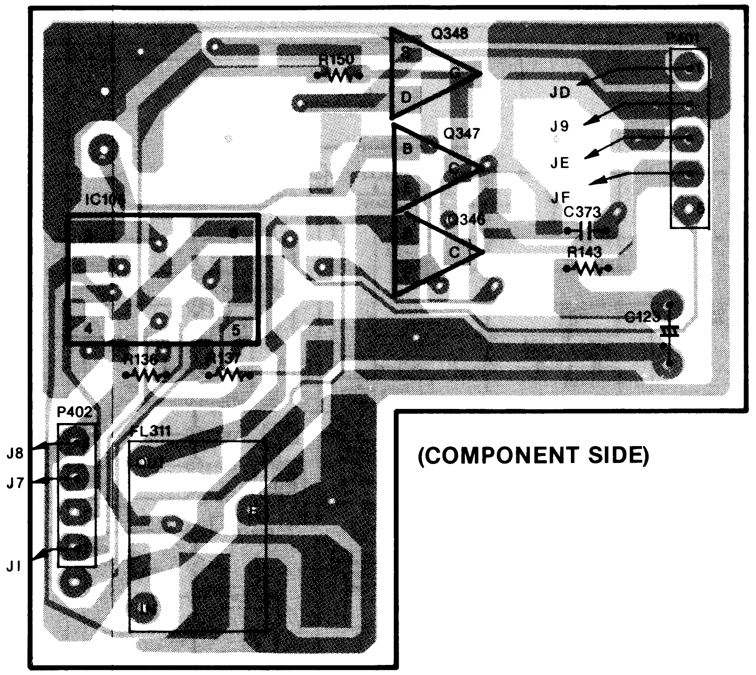
A.

PROCESS C.B.A. (VEP23063B)

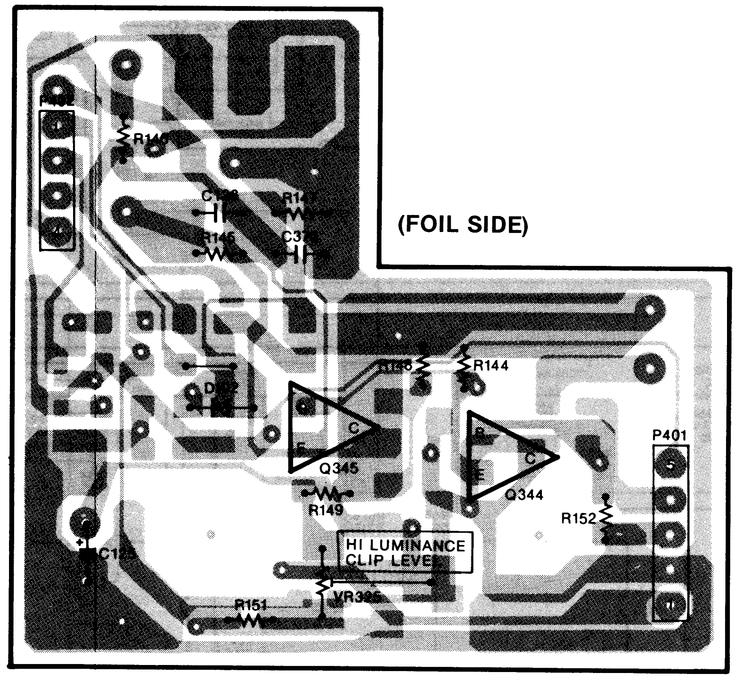

FL310
FL309
IC307
BA300
FP301
TP7
TP8
TP4
TP5
JA
R355
C357
IC301
IC306
IC310
IC304
IC303
IC302
FL307
FL308
JE
J1
J4a
J5
J3
B302
B301
C342
C344
R318
R401
R402
C316
C341
C360
C307
C305
R130
R120
QR302
C119
C120
J11
9
10
11
12
13
14
15

REF. NO. 100 • 300 • 400 SERIES (COMPONENT SIDE)

SUB PROCESS C.B.A. (VEP23068C)


Q348
R150
D
Q347
B
Q346
C
JD
J9
JE
JF
C373
R143
C123
IC104
4
5
R136
R137
P402
FL311
J8
J7
J1

(COMPONENT SIDE)


R146
R145
C370
R148
R144
Q345
Q344
R149
R152
P401
C125
R151
VR325
HI LUMINANCE
CLIP LEVEL

(FOIL SIDE)

SUB PROCESS C.B.A. (VEP23068C)

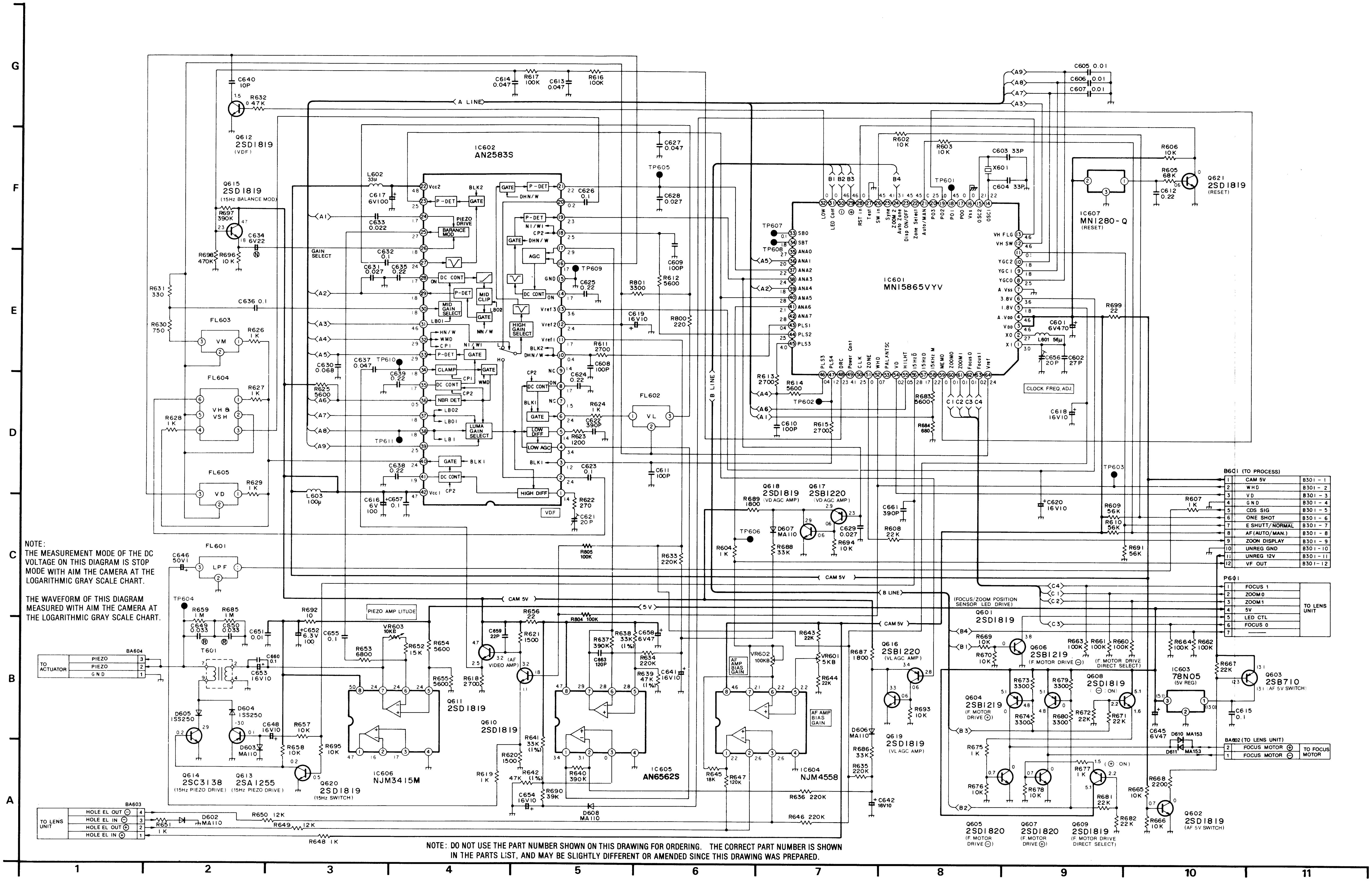
PROCESS C.B.A. & ENCODER PACK C.B.A. & SUB PROCESS C.B.A.

Transistor		
Q301	B-9	Ⓒ
Q302	B-8	Ⓒ
Q303	B-8	Ⓒ
Q304	B-2	Ⓕ
Q305	B-4	Ⓕ
Q306	B-4	Ⓕ
Q307	B-2	Ⓕ
Q308	B-1	Ⓕ
Q311	C-2	Ⓕ
Q314	B-3	Ⓕ
Q315	A-3	Ⓕ
Q316	A-12	Ⓒ
Q318	C-6	Ⓕ
Q319	C-6	Ⓕ
Q320	C-6	Ⓕ
Q321	C-5	Ⓕ
Q322	C-5	Ⓕ
Q323	C-9	Ⓒ
Q324	A-4	Ⓕ
Q325	B-4	Ⓕ
Q327	B-4	Ⓕ
Q328	A-3	Ⓕ
Q330	C-9	Ⓒ
Q331	D-1	Ⓕ
Q332	B-1	Ⓕ
Q339	B-5	Ⓕ
Q340	B-6	Ⓕ
Q344	A-15	Ⓕ
Q345	A-14	Ⓕ
Q346	D-15	Ⓒ
Q347	D-15	Ⓒ
Q348	D-15	Ⓒ
Q353	C-1	Ⓕ
Q901	D-7	Ⓕ
Q902	D-6	Ⓕ
Transistor & Resistor		
QR302	A-9	Ⓒ
Integrated Circuit		
IC101	A-9	Ⓒ
IC102	B-7	Ⓕ
IC103	A-8	Ⓒ
IC104	A-11	Ⓒ
IC105	D-14	Ⓒ
IC301	B-9	Ⓒ
IC302	B-12	Ⓒ
IC303	C-11	Ⓒ
IC304	B-12	Ⓒ
IC305	A-5	Ⓕ
IC306	C-5	Ⓕ
IC307	C-11	Ⓒ
IC308	B-10	Ⓒ
IC309	C-11	Ⓒ
IC310	B-10	Ⓒ
IC901	D-8	Ⓒ
Test Point		
TP1	A-13	Ⓒ
TP2	C-11	Ⓒ
TP2	C-3	Ⓕ
TP3	A-8	Ⓒ
TP3	A-6	Ⓕ
TP4	C-9	Ⓒ
TP4	C-5	Ⓕ
TP5	A-10	Ⓒ
TP5	C-5	Ⓕ
TP6	C-9	Ⓒ
TP6	C-5	Ⓕ
TP7	C-12	Ⓒ
TP7	C-2	Ⓕ
TP8	B-5	Ⓕ
TP9	A-11	Ⓒ
TP9	A-3	Ⓕ
TP10	C-9	Ⓒ
TP10	C-6	Ⓕ
TP11	C-9	Ⓒ
TP11	C-5	Ⓕ
TP12	B-8	Ⓒ
TP12	B-7	Ⓕ
Adjustment		
VR101	A-5	Ⓕ
VR102	A-6	Ⓕ
VR103	B-6	Ⓕ
VR104	B-6	Ⓕ
VR105	A-6	Ⓕ
VR106	A-6	Ⓕ
VR107	B-6	Ⓕ
VR301	B-6	Ⓕ
VR302	C-3	Ⓕ
VR303	B-3	Ⓕ
VR304	B-2	Ⓕ
VR305	B-2	Ⓕ
VR306	C-2	Ⓕ
VR308	A-2	Ⓕ
VR312	B-5	Ⓕ
VR313	B-5	Ⓕ
VR314	C-4	Ⓕ
VR315	C-5	Ⓕ
VR316	B-3	Ⓕ
VR317	B-3	Ⓕ
VR318	A-2	Ⓕ
VR319	B-2	Ⓕ
VR322	C-2	Ⓕ
VR323	C-2	Ⓕ
VR324	B-3	Ⓕ
VR325	A-14	Ⓕ
Connector		
B301	A-12	Ⓒ
B301	A-2	Ⓕ
B302	B-13	Ⓒ
B302	B-1	Ⓕ
BA301	C-9	Ⓒ
BA304	C-9	Ⓒ
BA304	C-5	Ⓕ
BA305	C-9	Ⓒ
BA305	C-5	Ⓕ
BA306	D-13	Ⓒ
BA306	C-1	Ⓕ
FP301	D-13	Ⓒ
FP301	C-1	Ⓕ
P401	D-15	Ⓒ
P401	A-15	Ⓕ
P402	C-14	Ⓒ
P402	B-14	Ⓕ

ADDRESS INFORMATION
Ⓒ ··· COMPONENT SIDE
Ⓕ ··· FOIL SIDE

Next Page:
AUTO FOCUS Section

3-8. AUTO FOCUS SCHEMATIC DIAGRAM

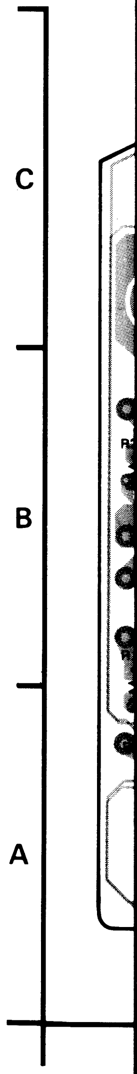

G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
IC602 AN2583S
IC601 MN15865VYV
IC607 MN1280-Q (RESET)
IC605 AN6562S
IC606 NJM3415M
IC604 NJM4558
IC603 78N05 (5V REG)
Q612 2SD1819 (VDF)
Q615 2SD1819 (15Hz BALANCE MOD)
Q614 2SC3138 (15Hz PIEZO DRIVE)
Q613 2SA1255 (15Hz PIEZO DRIVE)
Q620 2SD1819 (15Hz SWITCH)
Q611 2SD1819
Q610 2SD1819
Q618 2SD1819 (VD AGC AMP)
Q617 2SB1220 (VD AGC AMP)
Q616 2SB1220 (VL AGC AMP)
Q619 2SD1819 (VL AGC AMP)
Q601 2SD1819
Q606 2SB1219 (F MOTOR DRIVE ⊖)
Q604 2SB1219 (F MOTOR DRIVE ⊕)
Q608 2SD1819 (⊖ ON)
Q605 2SD1820 (F MOTOR DRIVE ⊖)
Q607 2SD1820 (F MOTOR DRIVE ⊕)
Q609 2SD1819 (F MOTOR DRIVE DIRECT SELECT)
Q603 2SB710 (AF 5V SWITCH)
Q602 2SD1819 (AF 5V SWITCH)
Q621 2SD1819 (RESET)
FL601 LPF
FL602 VL
FL603 VM
FL604 VH & VSH
FL605 VD
T601
A LINE
B LINE
CAM 5V
5V
TP601
TP602
TP603
TP604
TP605
TP606
TP607
TP608
TP609
TP610
TP611
CLOCK FREQ. ADJ
PIEZO AMP LITUDE
AF AMP BIAS GAIN
(FOCUS/ZOOM POSITION SENSOR LED DRIVE)
TO ACTUATOR
BA604
PIEZO
PIEZO
GND
BA603
TO LENS UNIT
HOLE EL OUT ⊖
HOLE EL IN ⊖
HOLE EL OUT ⊕
HOLE EL IN ⊕
B601 (TO PROCESS)
1 CAM 5V B301-1
2 WHD B301-2
3 VD B301-3
4 GND B301-4
5 CDS SIG B301-5
6 ONE SHOT B301-6
7 E SHUTT/NORMAL B301-7
8 AF(AUTO/MAN.) B301-8
9 ZOOM DISPLAY B301-9
10 UNREG GND B301-10
11 UNREG 12V B301-11
12 VF OUT B301-12
P601
1 FOCUS 1
2 ZOOM 0
3 ZOOM 1
4 5V
5 LED CTL
6 FOCUS 0
7
TO LENS UNIT
BA602 (TO LENS UNIT)
2 FOCUS MOTOR ⊕
1 FOCUS MOTOR ⊖
TO FOCUS MOTOR

NOTE:
THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

THE WAVEFORM OF THIS DIAGRAM MEASURED WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

3-9. AU



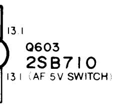
AUTO
WAVE

TP602 S
2V/20μs

PROCESS)

M 5V	B301 - 1
HD	B301 - 2
D	B301 - 3
ND	B301 - 4
S SIG	B301 - 5
E SHOT	B301 - 6
SHUTT/NORMAL	B301 - 7
(AUTO/MAN.)	B301 - 8
ON DISPLAY	B301 - 9
REG GND	B301 - 10
REG 12V	B301 - 11
OUT	B301 - 12

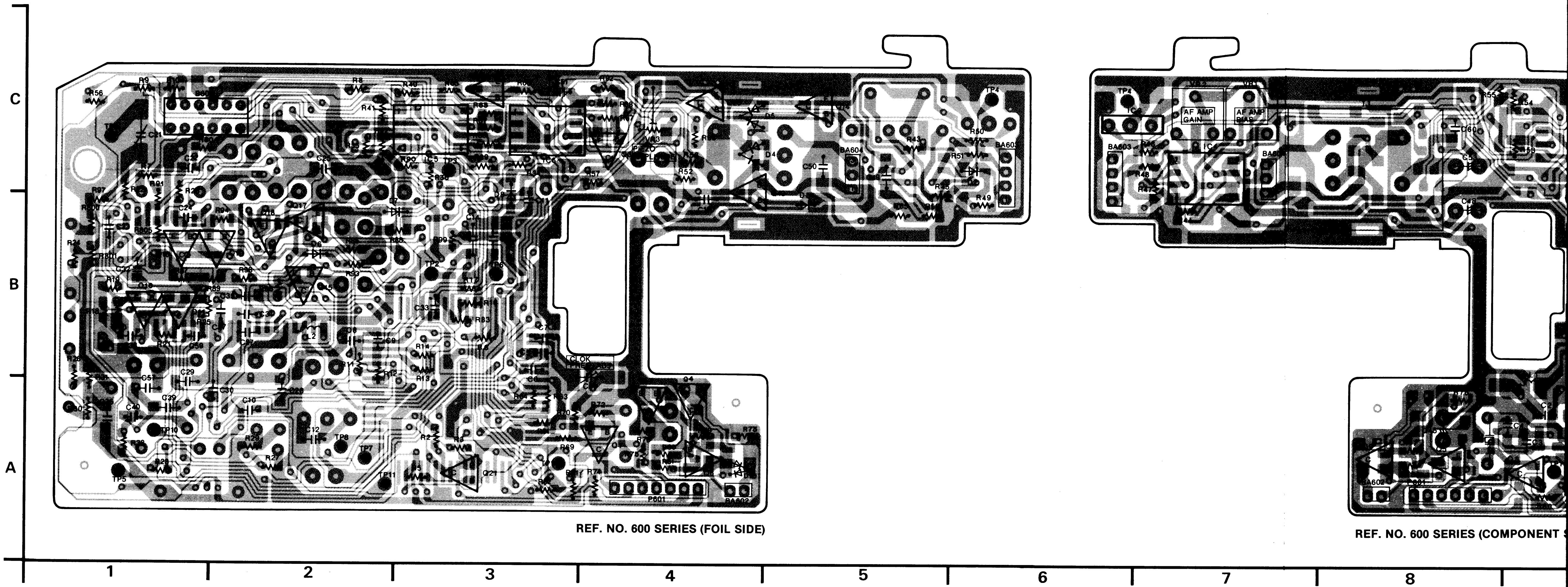
CUS 1	TO LENS UNIT
OM 0	
OM 1	
CTL	
CUS 0	


13.1
Q603
2SB710
13.1 (AF 5V SWITCH)

LENS UNIT)

US MOTOR ⊕	TO FOCUS MOTOR
US MOTOR ⊖	

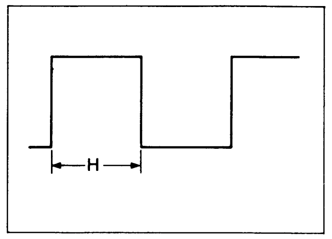
3-9. AUTO FOCUS C.B.A. (VEP28015E)


C
B
A
1
2
3
4
5
6
7
8
TP4
TP2
TP5
TP7
TP8
TP10
TP11
AF AMP GAIN
AF AMP BIAS
BA603
BA604
BA602
P601

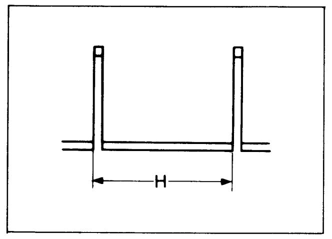
REF. NO. 600 SERIES (FOIL SIDE)

REF. NO. 600 SERIES (COMPONENT S

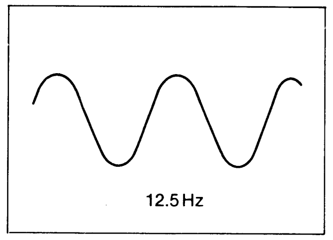
AUTO FOCUS CIRCUIT TP (Test Point) WAVE FORM(REF No. 600 Series)



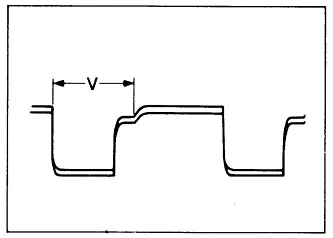
TP602 STOP
2V/20µsec. div. 5Vp-p



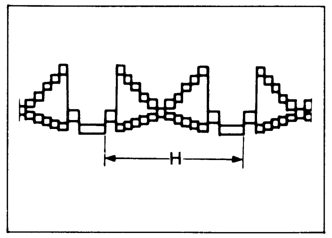
TP603 STOP
2V/20µsec. div. 5Vp-p



TP604 STOP
5V/20µsec. div. 70Vp-p



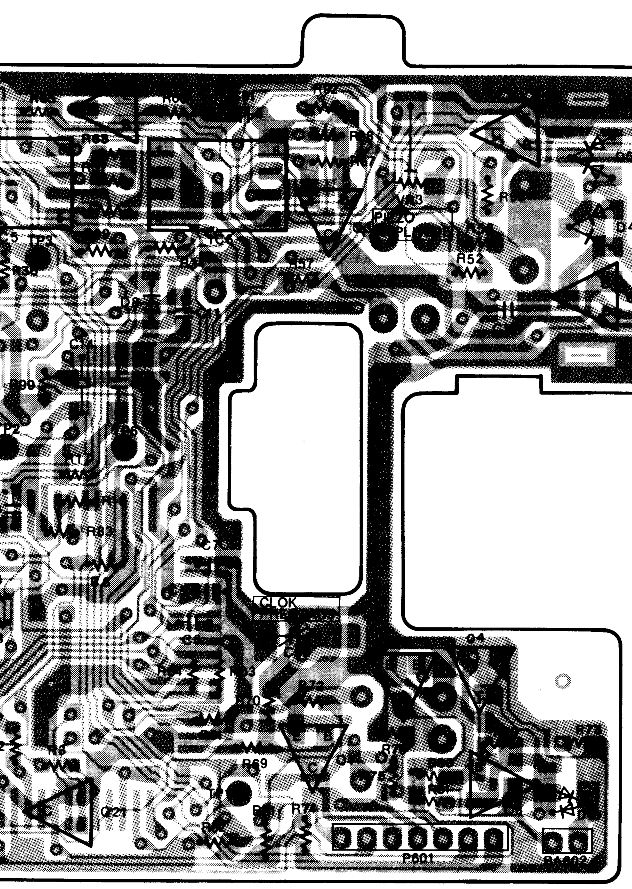
TP605 STOP
0.5V/5msec. div. 4Vp-p



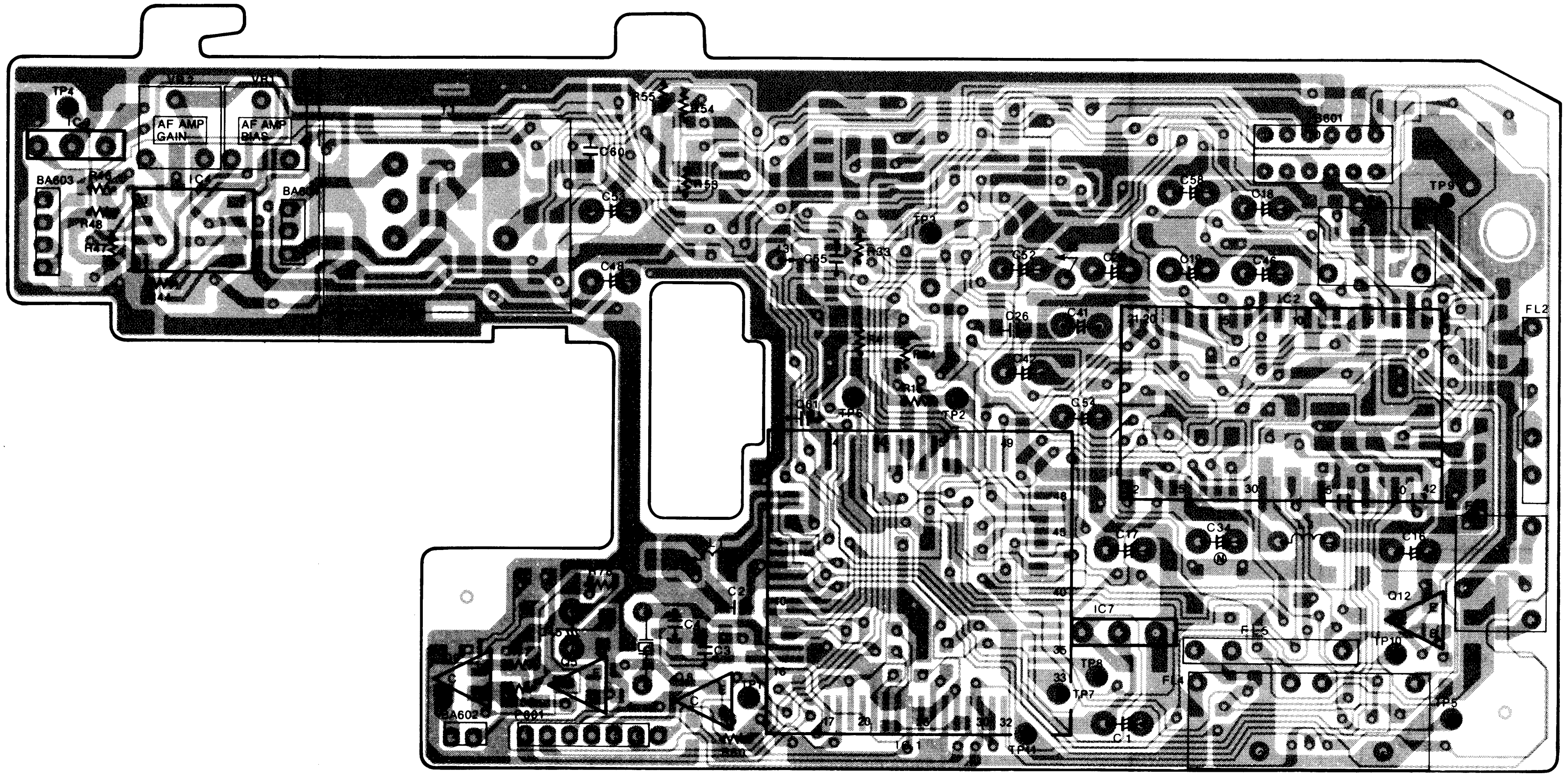
TP610 STOP
0.1V/20µsec. div. 0.2Vp-p

Transistor	
Q601	A-4 Ⓕ
Q602	C-3 Ⓕ
Q603	C-4 Ⓕ
Q604	B-4 Ⓕ
Q605	A-8 ©
Q606	A-4 Ⓕ
Q607	B-4 Ⓕ
Q608	A-9 ©
Q609	A-8 ©
Q610	B-1 Ⓕ
Q611	B-1 Ⓕ
Q612	C-11 ©
Q613	C-5 Ⓕ
Q614	C-5 Ⓕ
Q615	B-2 Ⓕ
Q616	B-1 Ⓕ
Q617	B-2 Ⓕ
Q618	B-2 Ⓕ
Q619	B-2 Ⓕ
Q620	C-4 Ⓕ
Q621	A-3 Ⓕ

ADDRESS INFORMATION
© ··· COMPONENT SIDE
Ⓕ ··· FOIL SIDE

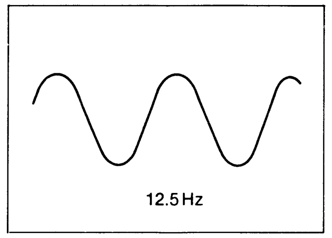

TP4
BA604
BA603
R52
C50
R43
R49
R50
R51
D4
CLOK
Q21
P601
BA602

REF. NO. 600 SERIES (FOIL SIDE)

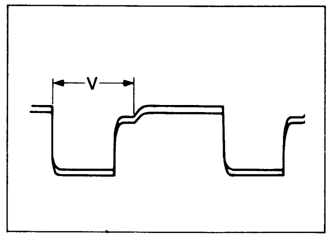

TP4
BA603
AF AMP GAIN
AF AMP BIAS
VR1
B601
TP9
FL2
IC2
IC7
Q12
TP10
TP8
TP7
TP6
TP5
TP3
TP2
C1
C17
C34
C41
C26
C58
BA602

REF. NO. 600 SERIES (COMPONENT SIDE)

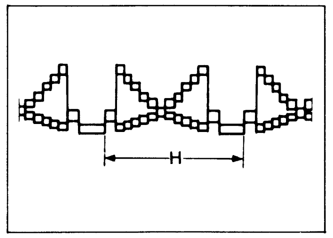
3 4 5 6 7 8 9 10 11



TP604 STOP
5V/20µsec. div. 70Vp-p



TP605 STOP
0.5V/5msec. div. 4Vp-p



TP610 STOP
0.1V/20µsec. div. 0.2Vp-p

AUTO FOCUS C.B.A.

Transistor	
Q601	A-4 Ⓕ
Q602	C-3 Ⓕ
Q603	C-4 Ⓕ
Q604	B-4 Ⓕ
Q605	A-8 Ⓒ
Q606	A-4 Ⓕ
Q607	B-4 Ⓕ
Q608	A-9 Ⓒ
Q609	A-8 Ⓒ
Q610	B-1 Ⓕ
Q611	B-1 Ⓕ
Q612	C-11 Ⓒ
Q613	C-5 Ⓕ
Q614	C-5 Ⓕ
Q615	B-2 Ⓕ
Q616	B-1 Ⓕ
Q617	B-2 Ⓕ
Q618	B-2 Ⓕ
Q619	B-2 Ⓕ
Q620	C-4 Ⓕ
Q621	A-3 Ⓕ

Integrated Circuit	
IC601	A-9 Ⓒ
IC602	C-11 Ⓒ
IC603	C-6 Ⓒ
IC604	C-7 Ⓒ
IC605	C-3 Ⓕ
IC606	C-3 Ⓕ
IC607	B-10 Ⓒ

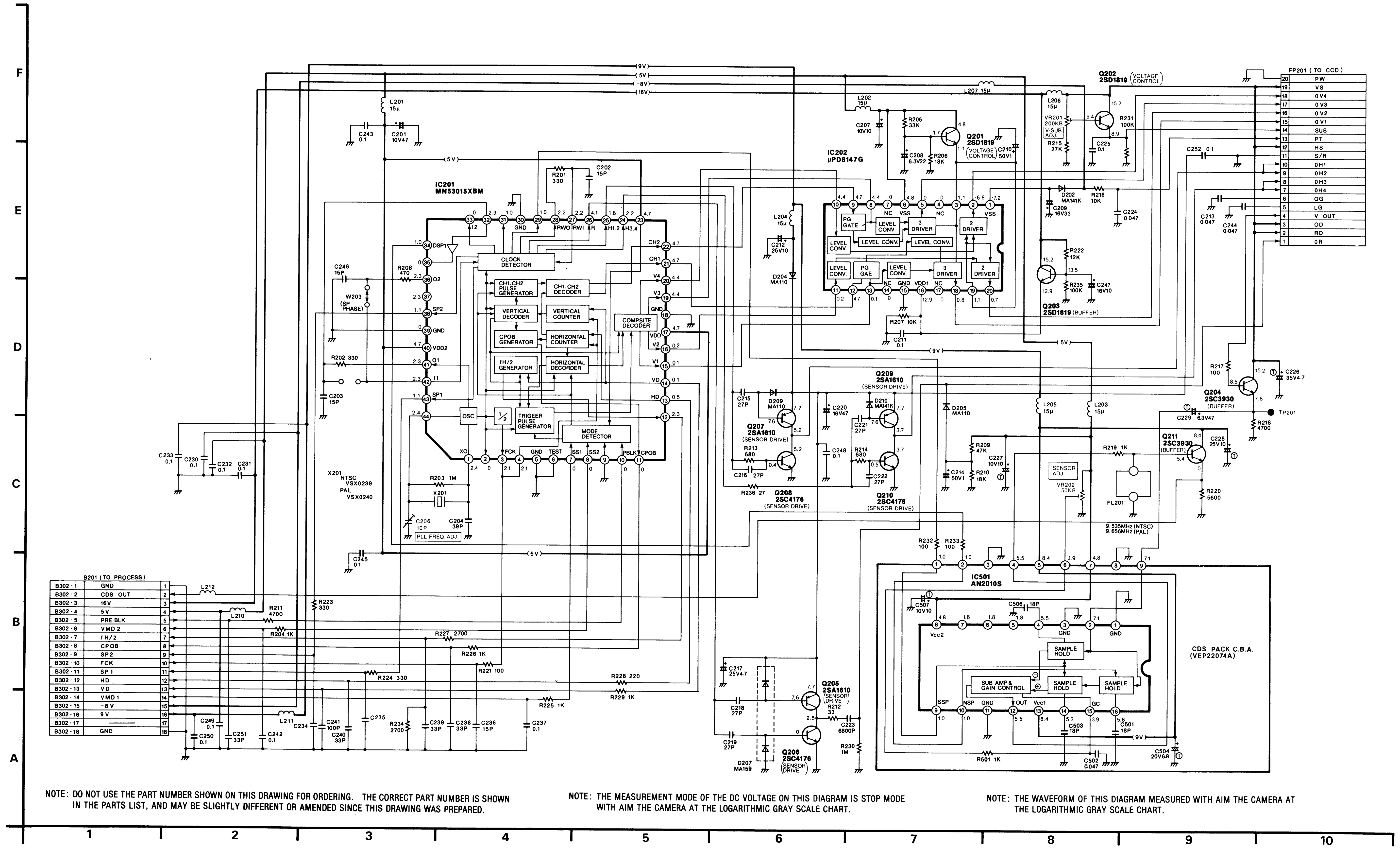
Test Point	
TP601	A-9 Ⓒ
TP601	A-3 Ⓕ
TP602	B-9 Ⓒ
TP602	B-3 Ⓕ
TP603	C-9 Ⓒ
TP603	C-3 Ⓕ
TP604	C-6 Ⓒ
TP604	C-6 Ⓕ
TP605	C-11 Ⓒ
TP605	A-1 Ⓕ
TP606	B-9 Ⓒ
TP606	B-3 Ⓕ
TP607	B-10 Ⓒ
TP607	A-2 Ⓕ
TP608	B-10 Ⓒ
TP608	A-2 Ⓕ
TP609	C-11 Ⓒ
TP609	C-1 Ⓕ
TP610	C-11 Ⓒ
TP610	A-1 Ⓕ
TP611	B-10 Ⓒ
TP611	A-2 Ⓕ

Adjustment	
VR601	C-7 Ⓒ
VR602	C-7 Ⓒ
VR603	C-4 Ⓕ
C621	C-1 Ⓕ
C656	B-4 Ⓕ

Connector	
B601	C-1 Ⓕ
B601	C-11 Ⓒ
BA602	A-8 Ⓒ
BA602	A-4 Ⓕ
BA603	C-6 Ⓕ
BA603	C-6 Ⓒ
BA604	C-7 Ⓒ
BA604	C-5 Ⓕ
P601	A-8 Ⓒ
P601	A-4 Ⓕ

ADDRESS INFORMATION
Ⓒ ··· COMPONENT SIDE
Ⓕ ··· FOIL SIDE

3-10. SENSOR & CDS SCHEMATIC DIAGRAM


IC201
MN53015XBM
CLOCK DETECTOR
CH1,CH2 PULSE GENERATOR
CH1,CH2 DECODER
VERTICAL DECODER
VERTICAL COUNTER
CPOB GENERATOR
HORIZONTAL COUNTER
fH/2 GENERATOR
HORIZONTAL DECODER
COMPSITE DECODER
OSC
1/2
TRIGEER PULSE GENERATOR
MODE DETECTOR
X201 NTSC VSX0239 PAL VSX0240
PLL FREQ. ADJ.
W203 (SP PHASE)
IC202
µPD6147G
PG GATE
LEVEL CONV.
3 DRIVER
2 DRIVER
Q201 2SD1819 (VOLTAGE CONTROL)
Q202 2SD1819 (VOLTAGE CONTROL)
Q203 2SD1819 (BUFFER)
Q204 2SC3930 (BUFFER)
Q211 2SC3930 (BUFFER)
Q207 2SA1610 (SENSOR DRIVE)
Q208 2SC4176 (SENSOR DRIVE)
Q209 2SA1610 (SENSOR DRIVE)
Q210 2SC4176 (SENSOR DRIVE)
Q205 2SA1610 (SENSOR DRIVE)
Q206 2SC4176 (SENSOR DRIVE)
VR201 200KB V-SUB ADJ.
VR202 50KB SENSOR ADJ.
FL201
9.535MHz (NTSC) 9.656MHz (PAL)
TP201
IC501
AN2010S
SAMPLE HOLD
SUB AMP & GAIN CONTROL
CDS PACK C.B.A. (VEP22074A)
FP201 (TO CCD)
20 PW
19 VS
18 OV4
17 OV3
16 OV2
15 OV1
14 SUB
13 PT
12 HS
11 S/R
10 OH1
9 OH2
8 OH3
7 OH4
6 OG
5 LG
4 V OUT
3 OD
2 RD
1 OR
B201 (TO PROCESS)
B302-1 GND 1
B302-2 CDS OUT 2
B302-3 16V 3
B302-4 5V 4
B302-5 PRE BLK 5
B302-6 VMD 2 6
B302-7 fH/2 7
B302-8 CPOB 8
B302-9 SP2 9
B302-10 FCK 10
B302-11 SP1 11
B302-12 HD 12
B302-13 VD 13
B302-14 VMD1 14
B302-15 -8V 15
B302-16 9V 16
B302-17 17
B302-18 GND 18
(9V)
(5V)
(-8V)
(16V)
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: THE WAVEFORM OF THIS DIAGRAM MEASURED WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

FP201 (TO CCD)

PW
VS
0 V4
0 V3
0 V2
0 V1
SUB
PT
HS
S/R
0 H1
0 H2
0 H3
0 H4
OG
LG
V OUT
OD
RD
0 R

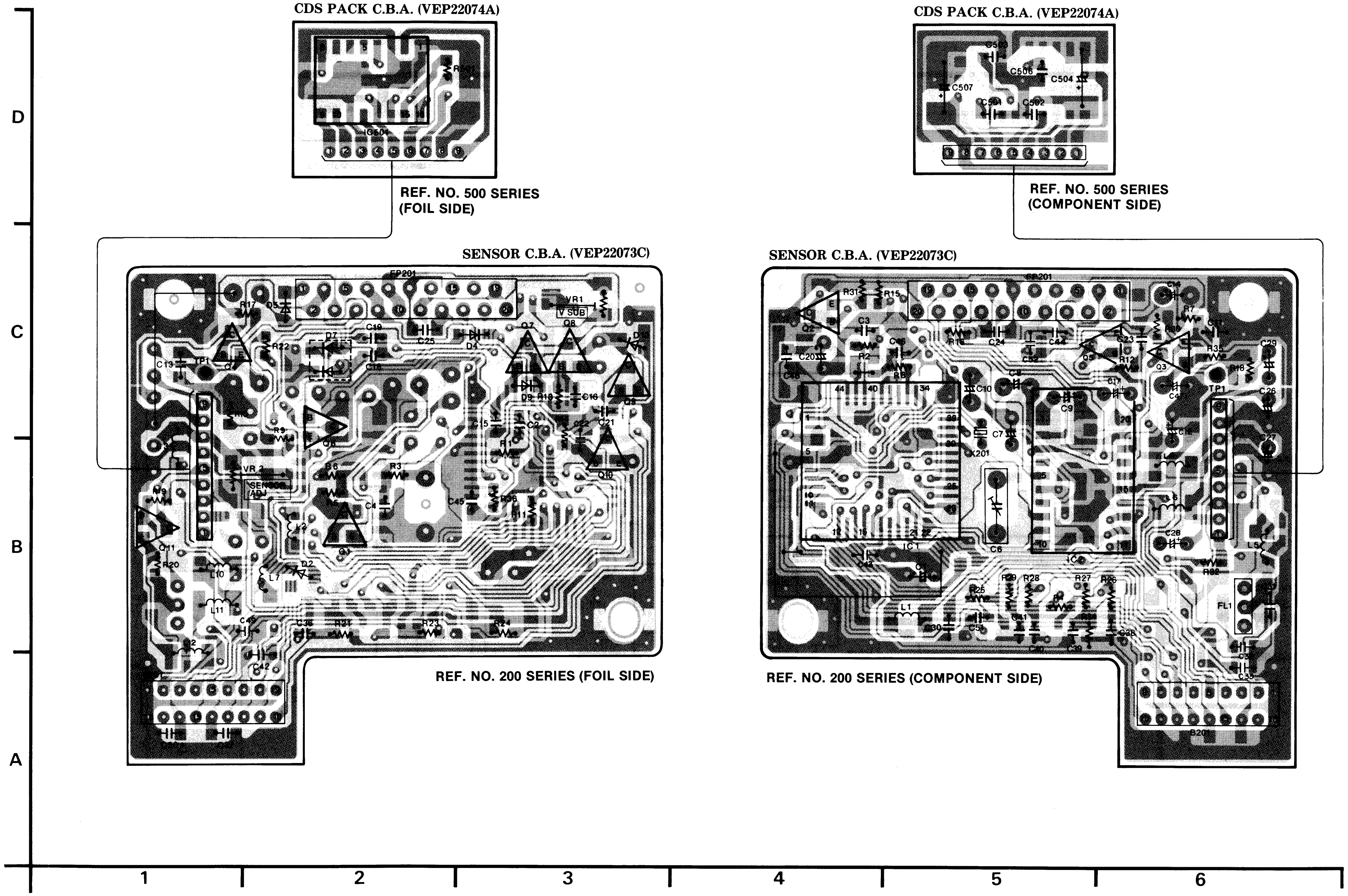
C226
35V4.7

201

AT

10

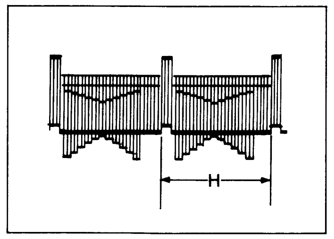
3-11. SENSOR C.B.A. (VEP22073C) & CDS PACK C.B.A. (VEP22074A)


CDS PACK C.B.A. (VEP22074A)
REF. NO. 500 SERIES
(FOIL SIDE)
SENSOR C.B.A. (VEP22073C)
REF. NO. 200 SERIES (FOIL SIDE)
CDS PACK C.B.A. (VEP22074A)
REF. NO. 500 SERIES
(COMPONENT SIDE)
SENSOR C.B.A. (VEP22073C)
REF. NO. 200 SERIES (COMPONENT SIDE)
FP201
VR1
V SUB
VR 2
SENSOR ADJ
IC501
IC1
IC2
X201
TP1
B201
FL1
D
C
B
A
1
2
3
4
5
6

SENSOR C.B.A. & CDS C.B.A.	
Transistor	
Q201	B-2 Ⓕ
Q202	C-4 ©
Q203	C-6 ©
Q204	C-1 Ⓕ
Q205	C-6 ©
Q206	C-2 Ⓕ
Q207	C-3 Ⓕ
Q208	C-3 Ⓕ
Q209	C-3 Ⓕ
Q210	B-3 Ⓕ
Q211	B-1 Ⓕ
Integrated Circuit	
IC201	B-5 ©
IC202	B-5 ©
IC501	D-2 Ⓕ
Test Point	
TP201	C-6 ©
TP201	C-1 Ⓕ
Adjustment	
VR201	C-3 Ⓕ
VR202	B-2 Ⓕ
C206	B-5 ©
Connector	
B201	A-6 ©
B201	A-1 Ⓕ
FP201	C-5 ©
FP201	C-2 Ⓕ

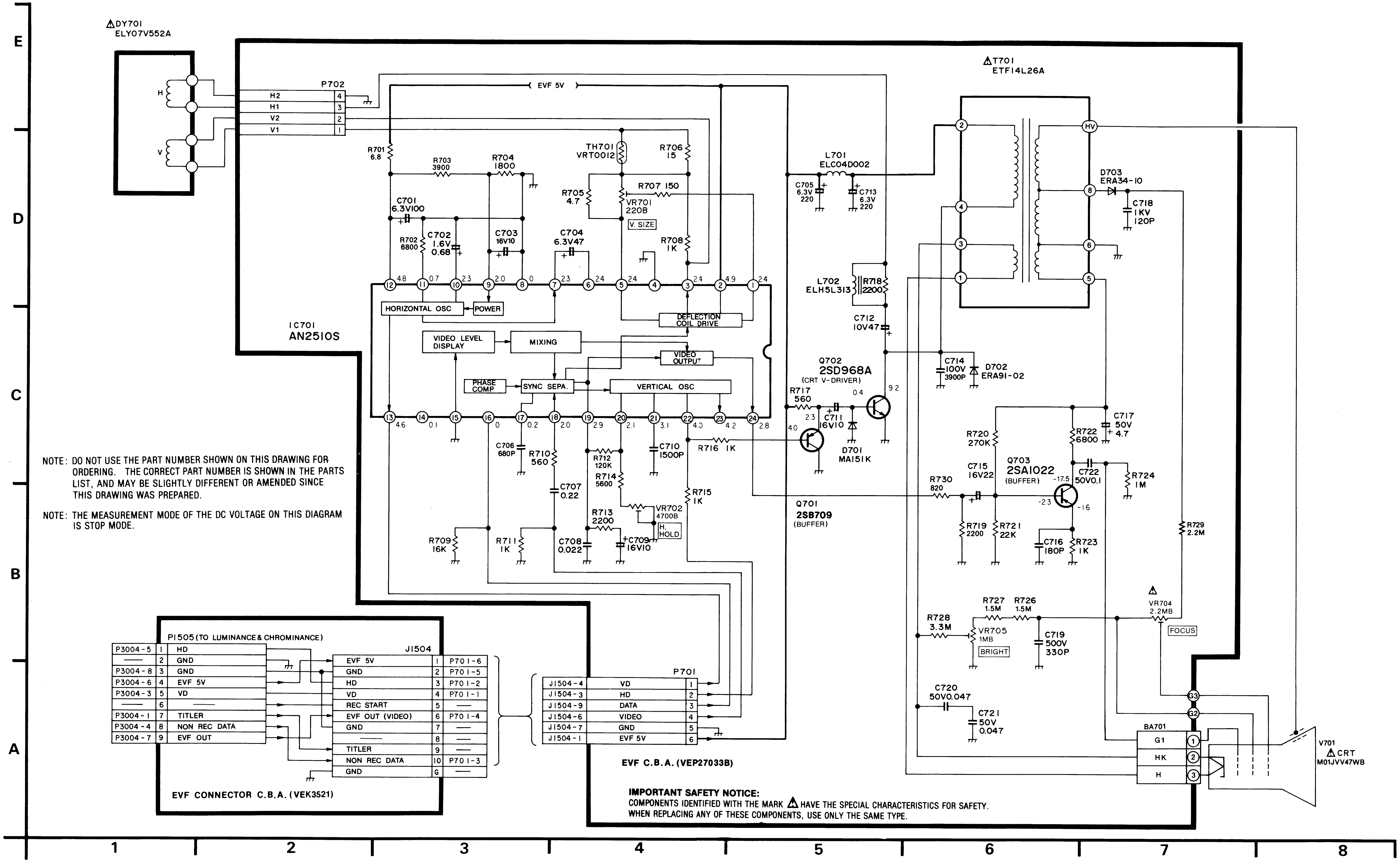
ADDRESS INFORMATION
© ··· COMPONENT SIDE
Ⓕ ··· FOIL SIDE

SENSOR CIRCUIT TP (Test Point) WAVE FORM (REF No. 200 Series)



TP201 STOP
20mV/20μsec. div. 0.6Vp-p

3-12. E.V.F. SCHEMATIC DIAGRAM



DY701
ELY07V552A
P702
H2
H1
V2
V1
EVF 5V
IC701
AN2510S
HORIZONTAL OSC
POWER
DEFLECTION COIL DRIVE
VIDEO LEVEL DISPLAY
MIXING
VIDEO OUTPUT
PHASE COMP
SYNC SEPA.
VERTICAL OSC
R701 6.8
R703 3900
R704 1800
TH701 VRT0012
R706 15
R705 4.7
R707 150
VR701 220B
V. SIZE
R708 1K
C701 6.3V100
R702 6800
C702 1.6V 0.68
C703 16V10
C704 6.3V47
C706 680P
R710 560
C707 0.22
R712 120K
R714 5600
C710 1500P
R716 1K
R715 1K
VR702 4700B
H. HOLD
R713 2200
R709 16K
R711 1K
C708 0.022
C709 16V10
L701
ELC04D002
C705 6.3V 220
C713 6.3V 220
L702
ELH5L313
R718 2200
C712 10V47
Q702
2SD968A
(CRT V-DRIVER)
R717 560
C711 16V10
D701 MA151K
Q701
2SB709
(BUFFER)
T701
ETF14L26A
HV
D703
ERA34-10
C718 1KV 120P
C714 100V 3900P
D702 ERA91-02
C717 50V 4.7
R720 270K
R722 6800
C715 16V22
Q703
2SA1022
(BUFFER)
C722 50V0.1
R724 1M
R730 820
R719 2200
R721 22K
C716 180P
R723 1K
R729 2.2M
R727 1.5M
R726 1.5M
R728 3.3M
VR705 1MB
BRIGHT
C719 500V 330P
VR704 2.2MB
FOCUS
C720 50V0.047
C721 50V 0.047
BA701
G1
HK
H
V701
CRT
M01JVV47WB
P1505 (TO LUMINANCE & CHROMINANCE)
J1504
P3004-5 1 HD
2 GND
P3004-8 3 GND
P3004-6 4 EVF 5V
P3004-3 5 VD
6
P3004-1 7 TITLER
P3004-4 8 NON REC DATA
P3004-7 9 EVF OUT
EVF 5V 1 P701-6
GND 2 P701-5
HD 3 P701-2
VD 4 P701-1
REC START 5
EVF OUT (VIDEO) 6 P701-4
GND 7
8
TITLER 9
NON REC DATA 10 P701-3
GND G
P701
J1504-4 VD 1
J1504-3 HD 2
J1504-9 DATA 3
J1504-6 VIDEO 4
J1504-7 GND 5
J1504-1 EVF 5V 6
EVF CONNECTOR C.B.A. (VEK3521)
EVF C.B.A. (VEP27033B)
E
D
C
B
A
1
2
3
4
5
6
7
8

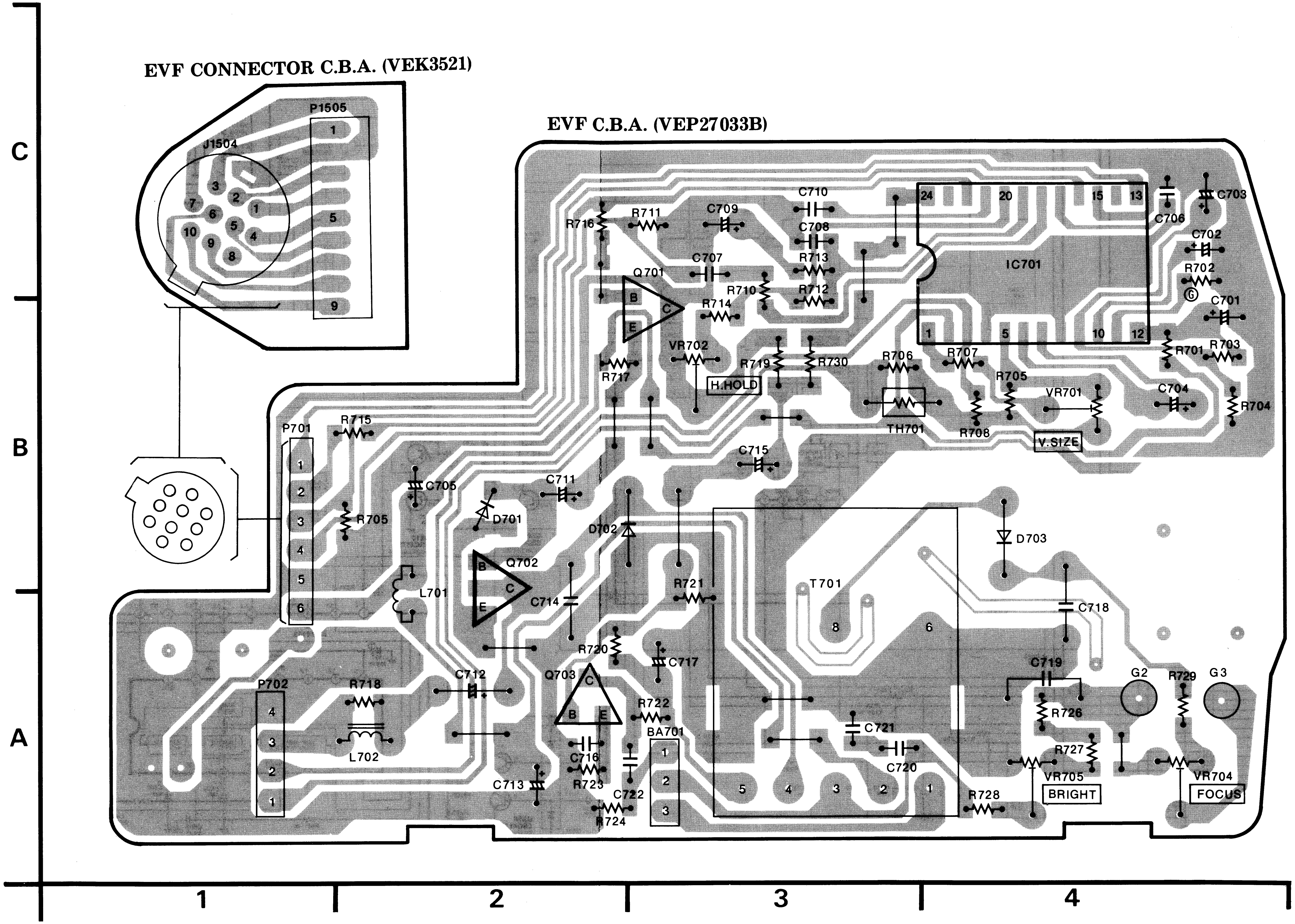
NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

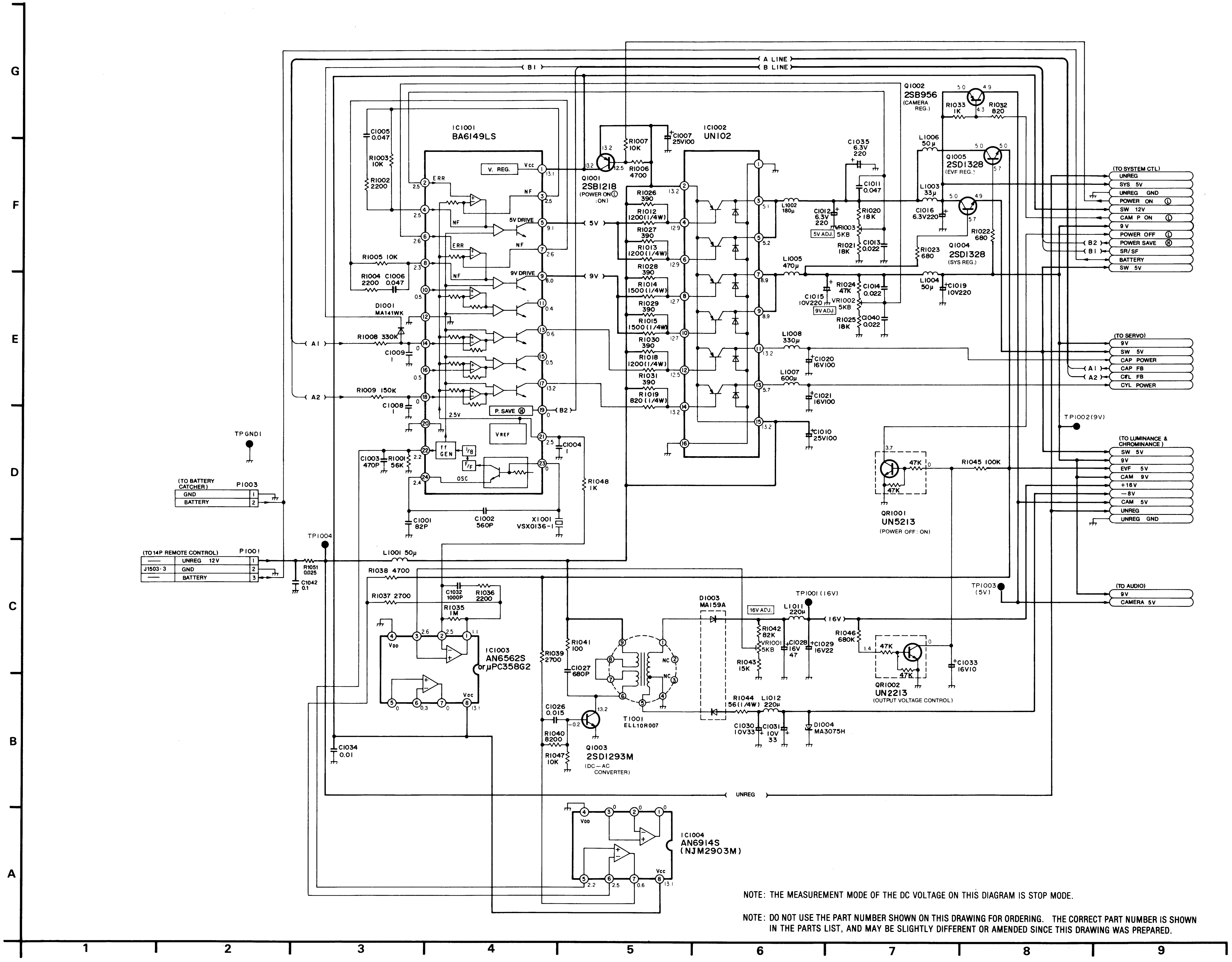
Back Page:
SENSOR Section

3-13. E.V.F. C.B.A. (VEP27033B)


EVF CONNECTOR C.B.A. (VEK3521)
EVF C.B.A. (VEP27033B)
J1504
P1505
P701
P702
R715
R705
C705
D701
C711
D702
Q701
Q702
Q703
L701
L702
R718
C712
C713
C714
R716
R711
C709
C710
C708
C707
R713
R712
R710
R714
VR702
R717
R719
R730
H.HOLD
C715
R720
R721
C717
R722
C716
R723
R724
C722
BA701
T701
C721
C720
IC701
C703
C706
C702
R702
C701
R701
R703
R706
R707
R705
VR701
R708
TH701
V.SIZE
C704
R704
D703
C718
C719
R726
R727
R728
G2
G3
R729
VR705
BRIGHT
VR704
FOCUS
C
B
A
1
2
3
4

3-14. POWER SUPPLY SCHEMATIC DIAGRAM

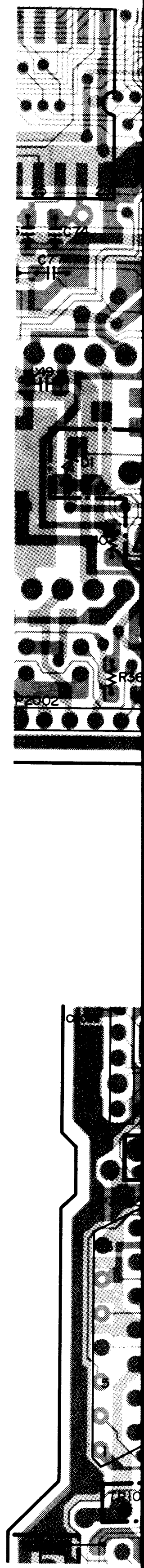
3-15. P



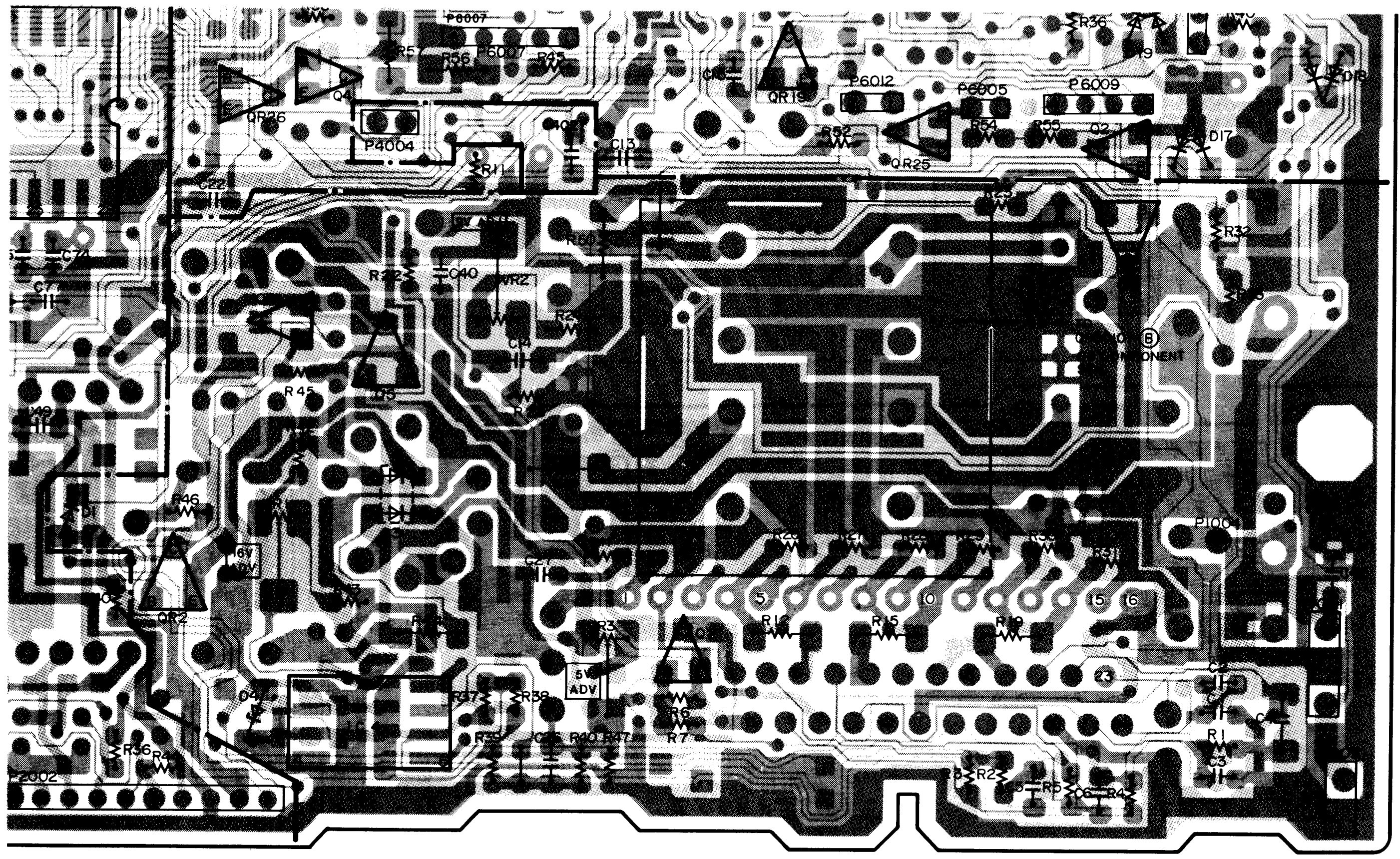
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
A LINE
B LINE
B1
A1
A2
B2
5V
9V
16V
UNREG
IC1001
BA6149LS
V. REG.
Vcc
ERR
NF
5V DRIVE
9V DRIVE
P. SAVE
VREF
ff GEN
1/8
F/F
OSC
IC1002
UN102
IC1003
AN6562S
or μPC358G2
IC1004
AN6914S
(NJM2903M)
Q1001
2SB1218
(POWER ON Ⓛ :ON)
Q1002
2SB956
(CAMERA REG.)
Q1003
2SD1293M
(DC-AC CONVERTER)
Q1004
2SD1328
(SYS REG.)
Q1005
2SD1328
(EVF REG.)
QR1001
UN5213
(POWER OFF: ON)
QR1002
UN2213
(OUTPUT VOLTAGE CONTROL)
T1001
ELL10R007
D1001
MA141WK
D1003
MA159A
D1004
MA3075H
X1001
VSX0136-1
5V ADJ.
9V ADJ.
16V ADJ.
VR1001 5KB
VR1002 5KB
VR1003 5KB
TPGND1
TP1001 (16V)
TP1002 (9V)
TP1003 (5V)
TP1004
(TO BATTERY CATCHER)
P1003
GND
BATTERY
(TO 14P REMOTE CONTROL)
P1001
J1503-3
UNREG 12V
GND
BATTERY
(TO SYSTEM CTL)
UNREG
SYS 5V
UNREG GND
POWER ON Ⓛ
SW 12V
CAM P ON Ⓛ
9V
POWER OFF Ⓛ
POWER SAVE Ⓗ
SR/SF
BATTERY
SW 5V
(TO SERVO)
9V
SW 5V
CAP POWER
CAP FB
C/L FB
CYL POWER
(TO LUMINANCE & CHROMINANCE)
SW 5V
9V
EVF 5V
CAM 9V
+16V
−8V
CAM 5V
UNREG
UNREG GND
(TO AUDIO)
9V
CAMERA 5V
R1001 56K
R1002 2200
R1003 10K
R1004 2200
R1005 10K
R1006 4700
R1007 10K
R1008 330K
R1009 150K
R1012 1200(1/4W)
R1013 1200(1/4W)
R1014 1500(1/4W)
R1015 1500(1/4W)
R1018 1200(1/4W)
R1019 820(1/4W)
R1020 18K
R1021 18K
R1022 680
R1023 680
R1024 47K
R1025 18K
R1026 390
R1027 390
R1028 390
R1029 390
R1030 390
R1031 390
R1032 820
R1033 1K
R1035 1M
R1036 2200
R1037 2700
R1038 4700
R1039 2700
R1040 8200
R1041 100
R1042 82K
R1043 15K
R1044 56(1/4W)
R1045 100K
R1046 680K
R1047 10K
R1048 1K
R1051 0.025
C1001 82P
C1002 560P
C1003 470P
C1004 1
C1005 0.047
C1006 0.047
C1007 25V100
C1008 1
C1009 1
C1010 25V100
C1011 0.047
C1012 6.3V 220
C1013 0.022
C1014 0.022
C1015 10V220
C1016 6.3V220
C1019 10V220
C1020 16V100
C1021 16V100
C1026 0.015
C1027 680P
C1028 16V 47
C1029 16V22
C1030 10V33
C1031 10V 33
C1032 1000P
C1033 16V10
C1034 0.01
C1035 6.3V 220
C1040 0.022
C1042 0.1
L1001 50μ
L1002 180μ
L1003 33μ
L1004 50μ
L1005 470μ
L1006 50μ
L1007 600μ
L1008 330μ
L1011 220μ
L1012 220μ
47K
47K
NC
VDD
Vcc

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

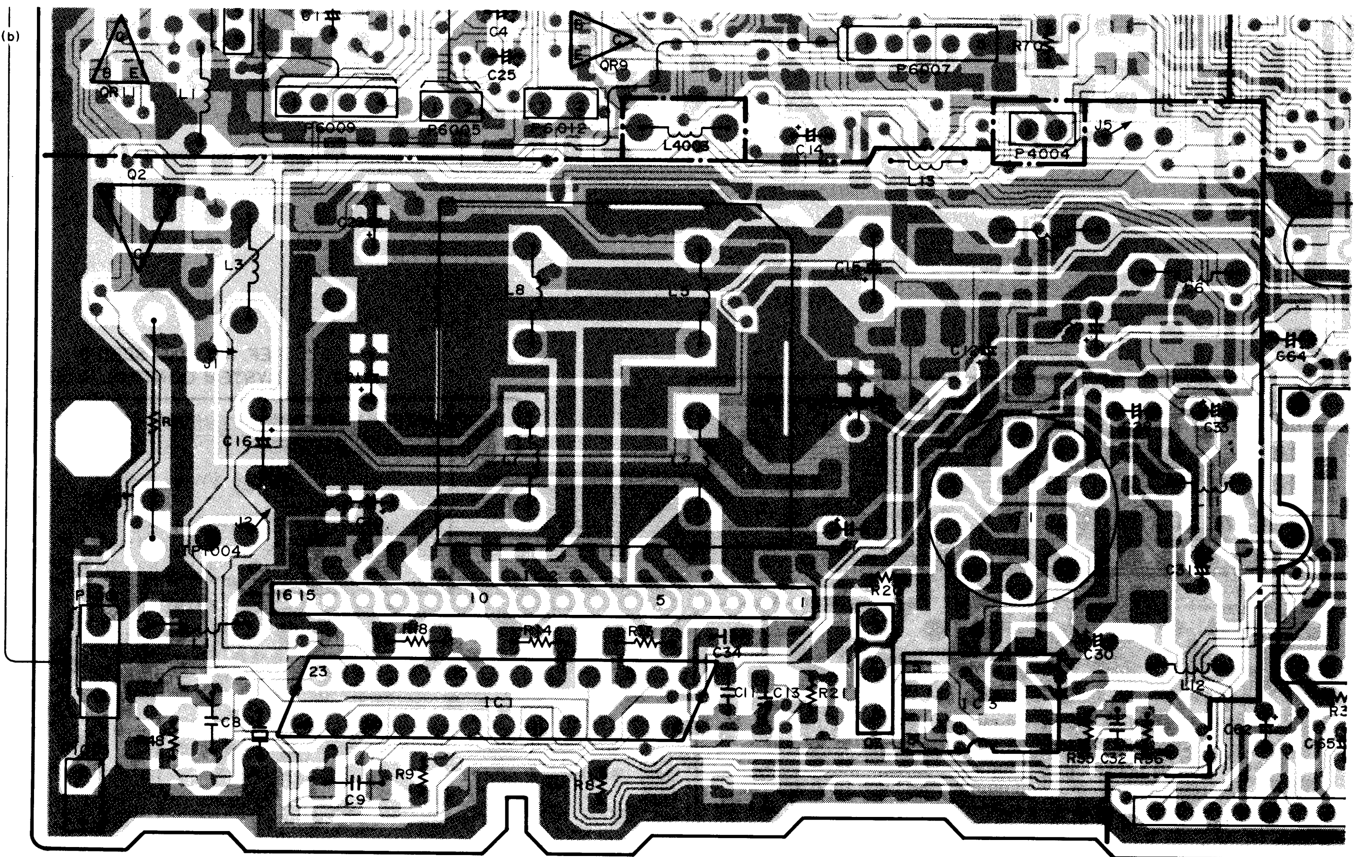


3-15. POWER SUPPLY Section In Main C.B.A. (VEP03482A)


P6007
R57
R56
P6007
R43
R36
D18
QR26
Q4
QR19
P6012
P6005
P6009
P4004
R11
C13
R52
R54
R55
Q27
D17
QR25
C22
C74
C7
R22
C40
VR2
R32
C14
R45
R46
6V
ADJ
P1004
QR2
C27
R12
R15
R19
5V
ADJ
D4
R37
R38
R39
R36
R44
R6
R7
R1
C3
R2
R5
R4
P2802
(b)

(FOIL SIDE)

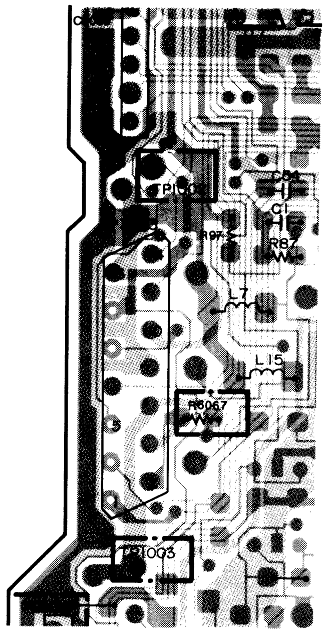
REF. NO. 1000 SERIES
(POWER SUPPLY Section)

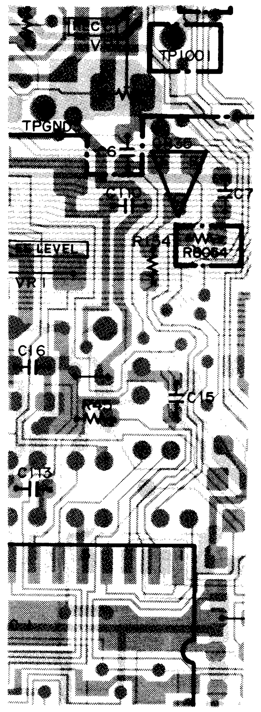

QR1
Q2
P6009
P6005
P6012
C4
C25
QR9
L4005
C14
P6007
R70
L3
P4004
L5
L3
C16
TP1004
16 15
10
5
1
R18
R14
R16
C12
23
IC1
C8
C11
C13
R21
R20
C30
L2
R50
C32
R56
R9
C9
R8
IC3
C64
C35
C55

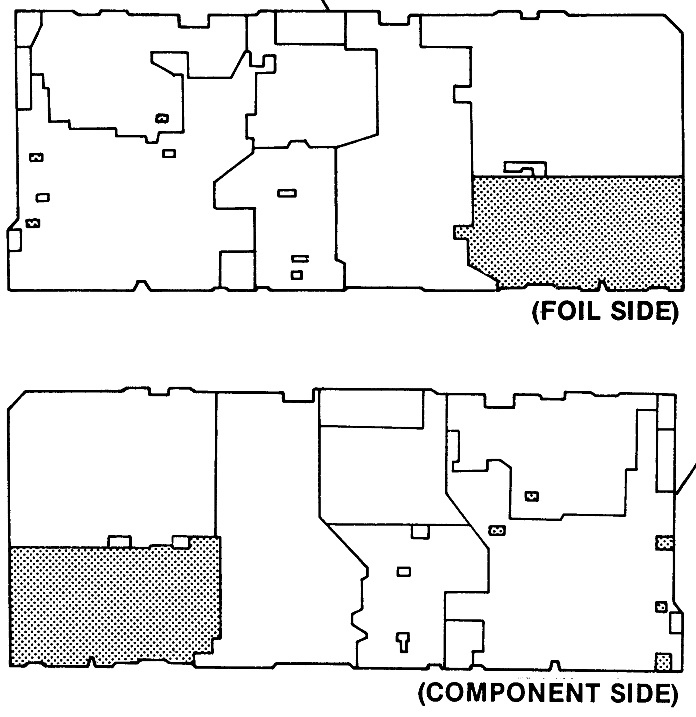
REF. NO. 1000 SERIES
(POWER SUPPLY Section)

(COMPONENT SIDE)

REF.
(SER

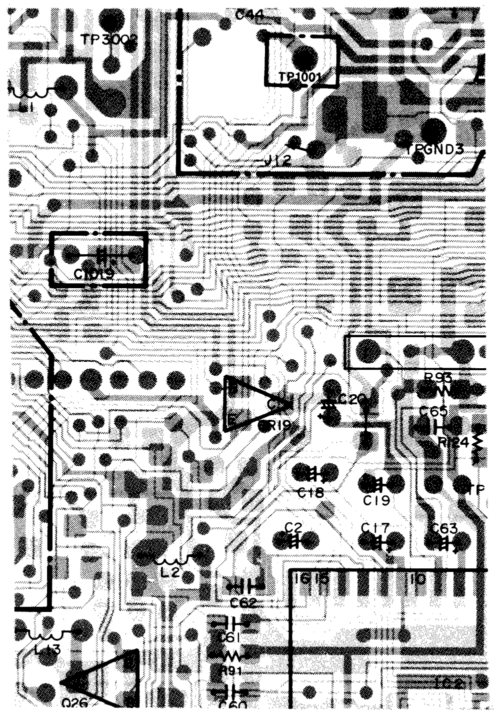

TP1002
C1
R67
L15
R6067
TP1003

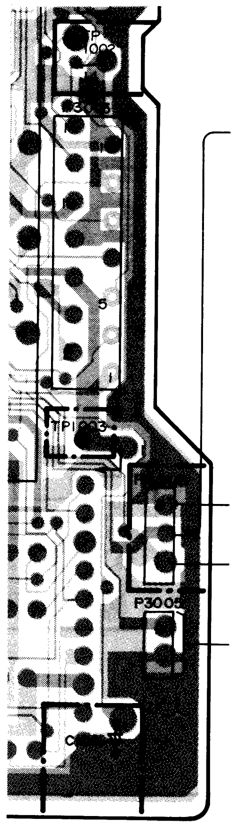

REC
TP1001
TPGND1
C7
LEVEL
VR1
R6064
C16
C15
C113



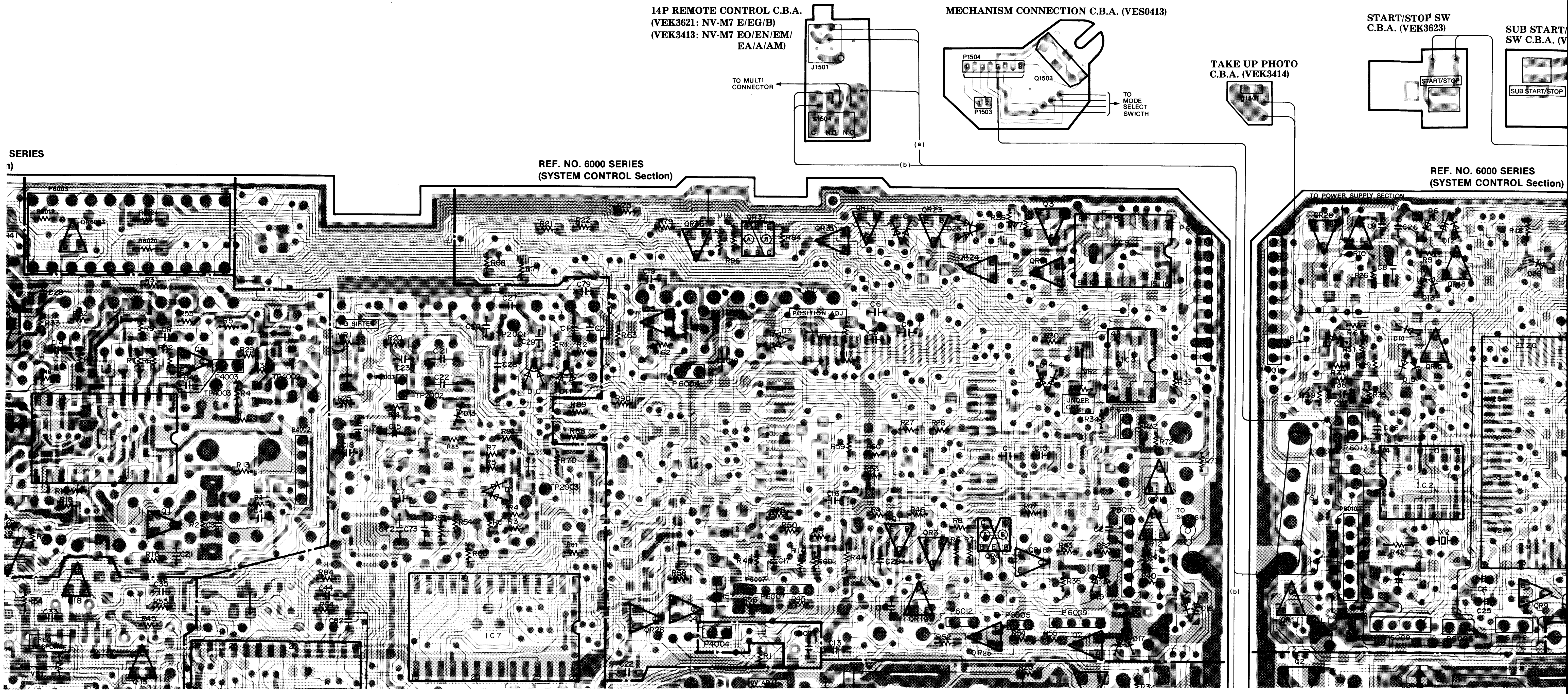
(FOIL SIDE)

(COMPONENT SIDE)

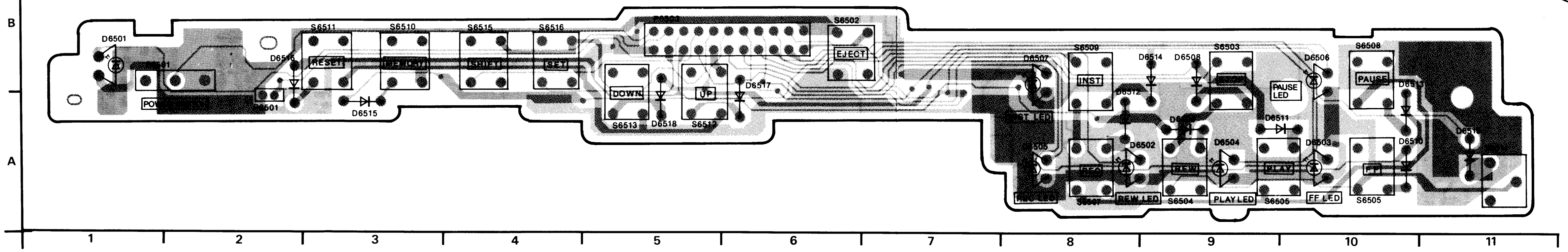

C44
TP3002
TP1001
J12
TPGND3
C1010
R95
C65
R18
C20
R24
C18
C19
C2
C17
C63
L2
C62
16 15
10
C61
R91
L13
C60
Q26
IC2

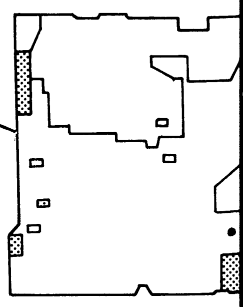

TP1002
5
TP1003
P3006

3-16. SYSTEM CONTROL Section In Main C.B.A. (VEP03482A), CAMERA OPERATION (I) C.B.A. (VEP00K79A) & CAMERA OPERATION (II) C.B.A. (VEK3522)


14P REMOTE CONTROL C.B.A.
(VEK3621: NV-M7 E/EG/B)
(VEK3413: NV-M7 EO/EN/EM/EA/A/AM)
J1501
TO MULTI CONNECTOR
S1504
C NO NC
MECHANISM CONNECTION C.B.A. (VES0413)
P1504
Q1503
P1503
TO MODE SELECT SWICTH
TAKE UP PHOTO C.B.A. (VEK3414)
Q1501
START/STOP SW C.B.A. (VEK3623)
START/STOP
SUB START/ SW C.B.A. (V
SUB START/STOP
(a)
(b)
SERIES
REF. NO. 6000 SERIES (SYSTEM CONTROL Section)
REF. NO. 6000 SERIES (SYSTEM CONTROL Section)
TO POWER SUPPLY SECTION
P6003
POSITION ADJ
UNDER
IC2
IC3
IC7
P4002
P4003
P4004
TP4003
TP2001
TP2002
TP2003
P6004
P6005
P6007
P6009
P6010
P6012
P6013
FREQ RESPONSE
TO SUB SIS
X2

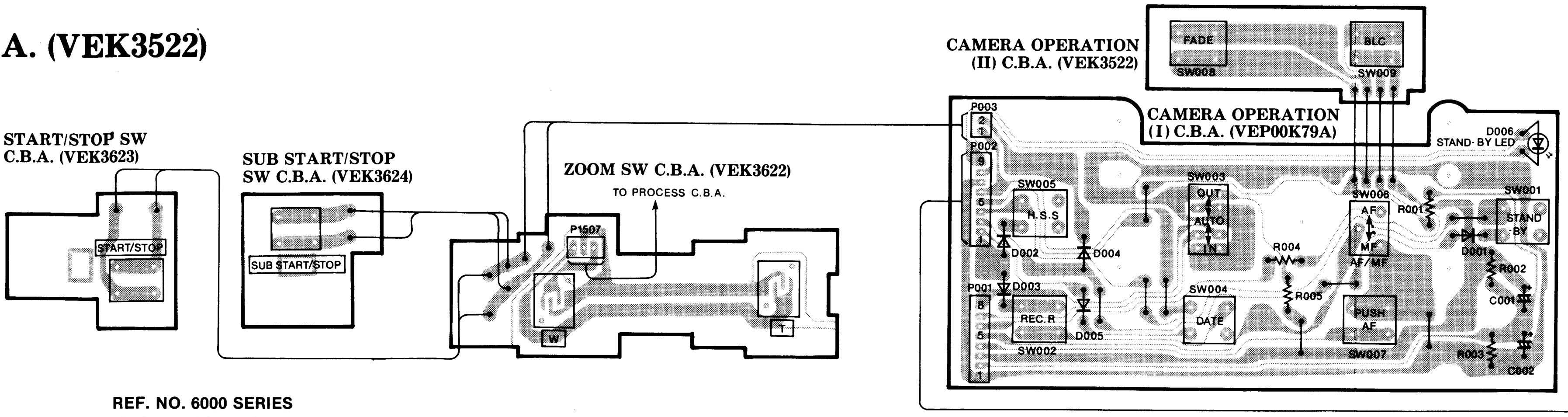
3-17. OPERATION C.B.A. (VEP06452A)

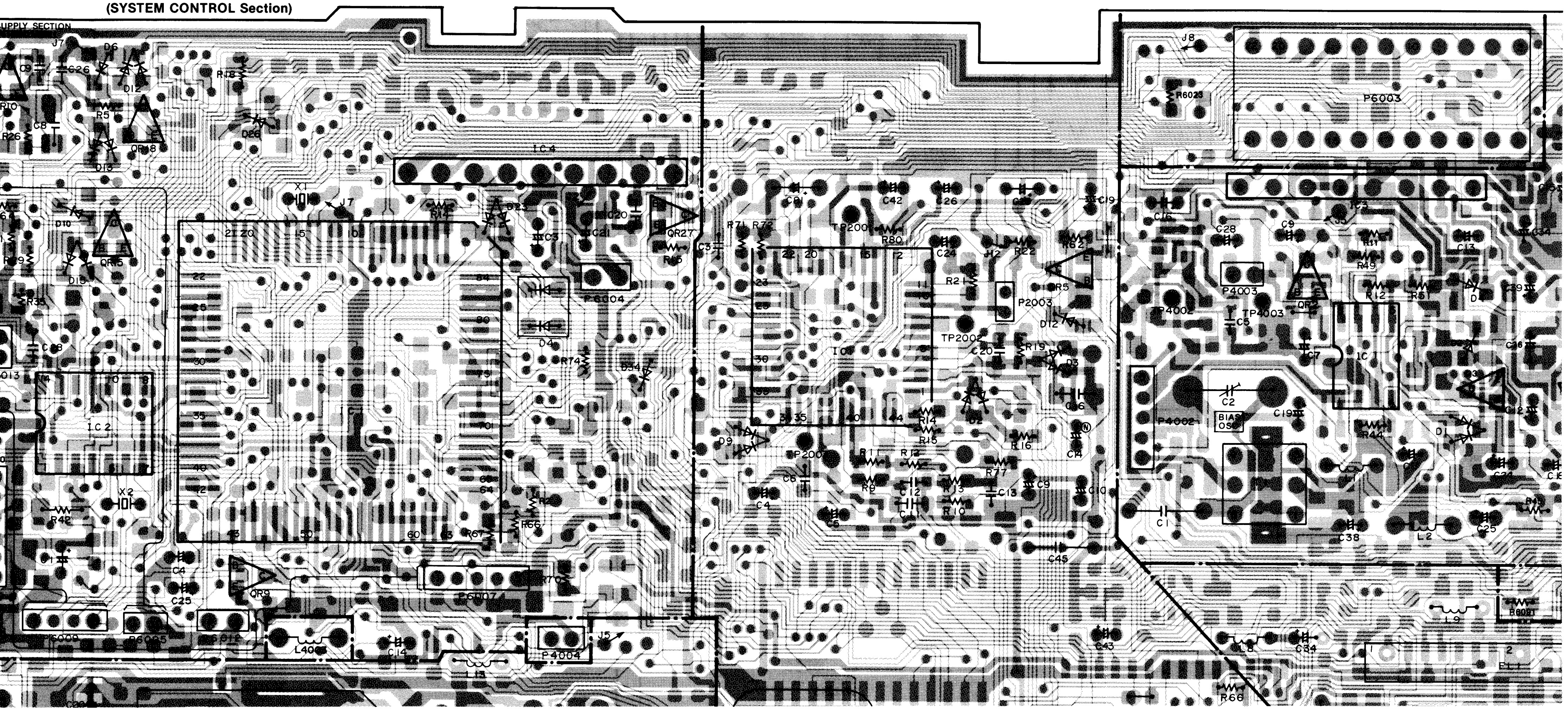

B
A
1
2
3
4
5
6
7
8
9
10
11
D6501
POWER
S6501
D6516
D6515
S6511
RESET
S6510
MEMORY
S6515
SHIFT
S6516
SET
S6502
EJECT
DOWN
UP
S6513
D6518
S6512
D6517
D6507
REC LED
S6509
INST
D6514
D6508
S6503
D6512
D6502
D6504
D6511
PAUSE LED
D6506
D6503
S6508
PAUSE
D6513
D6510
D6509
REW LED
S6504
PLAY LED
S6506
FF LED
S6505
S6507

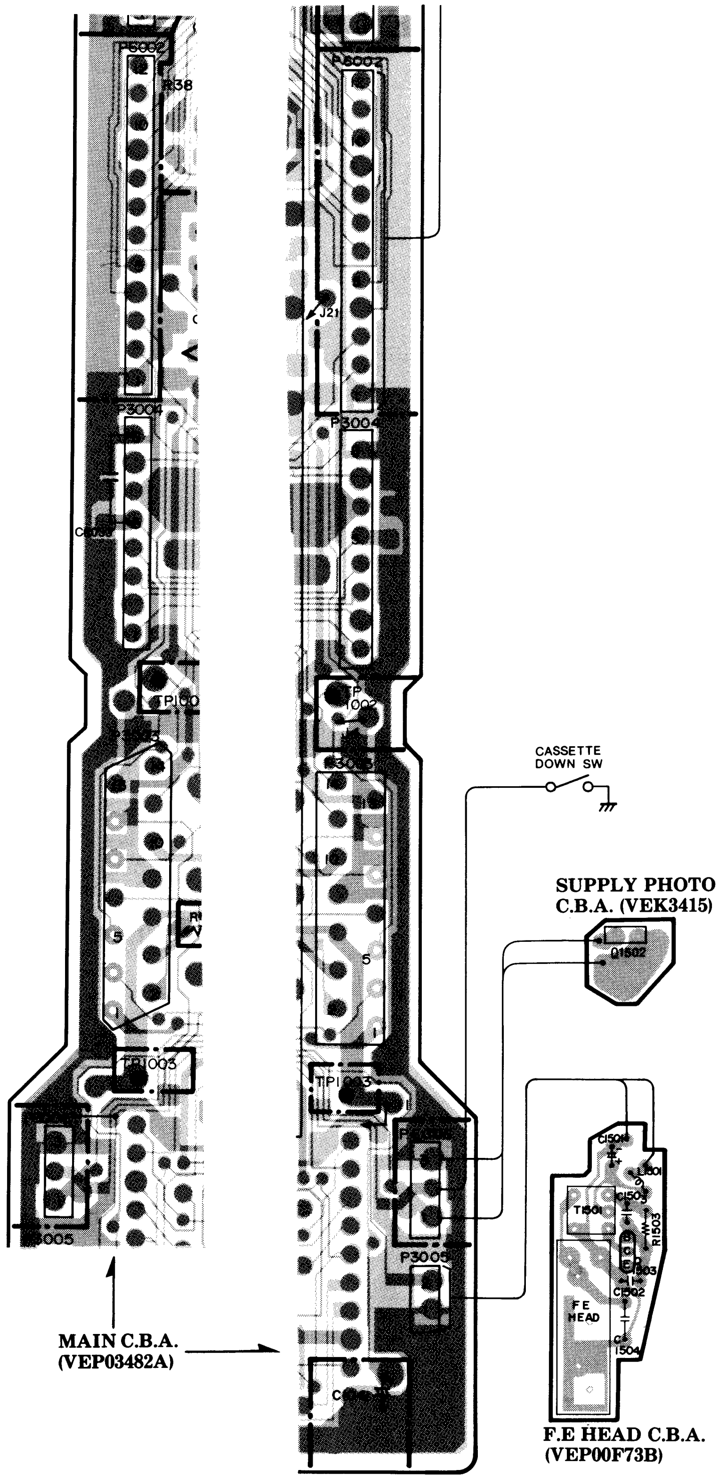


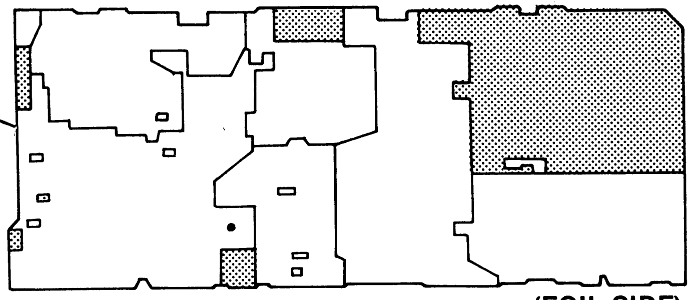
Back Page:
POWER SUPPLY Section

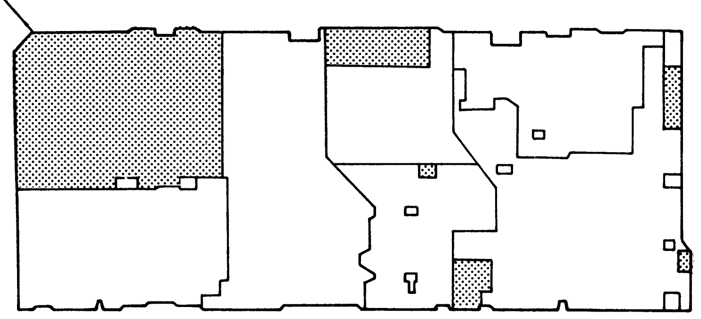
B.A. (VEK3522)

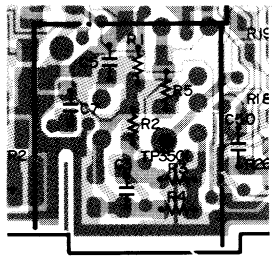

START/STOP SW C.B.A. (VEK3623)
START/STOP
SUB START/STOP SW C.B.A. (VEK3624)
SUB START/STOP
ZOOM SW C.B.A. (VEK3622)
TO PROCESS C.B.A.
P1507
W
T
CAMERA OPERATION (II) C.B.A. (VEK3522)
FADE
BLC
SW008
SW009
CAMERA OPERATION (I) C.B.A. (VEP00K79A)
P003
P002
P001
SW005
R.S.S
D002
D004
D003
REC.R
D005
SW002
SW003
OUT AUTO IN
SW004
DATE
R004
R005
SW006
AF MF
AF/MF
PUSH AF
SW007
R001
D006
STAND-BY LED
SW001
STAND BY
D001
R002
C001
R003
C002

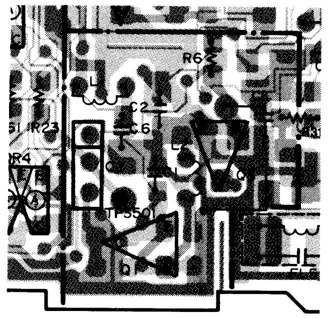

REF. NO. 6000 SERIES
(SYSTEM CONTROL Section)
REF. NO. 400
(AUDIO Secti
IC4
IC2
IC
IC
P6003
P6004
P6007
P4003
P4002
P4004
P2003
TP2001
TP2002
TP4002
TP4003
BIAS OSC
X1
X2
QR27
QR9
L4001
R6023
J5
J7
J8


P6006
P6002
J21
P3006
P3004
TP1003
P3005
P3003
CASSETTE DOWN SW
SUPPLY PHOTO C.B.A. (VEK3415)
Q1502
T1501
FE HEAD
MAIN C.B.A. (VEP03482A)
F.E HEAD C.B.A. (VEP00F73B)


(FOIL SIDE)


(COMPONENT SIDE)


REF. NO. 3500 SERIES
(ROTARY ERASE Section)


REF. NO. 3500 SERIES
(ROTARY ERASE Section)

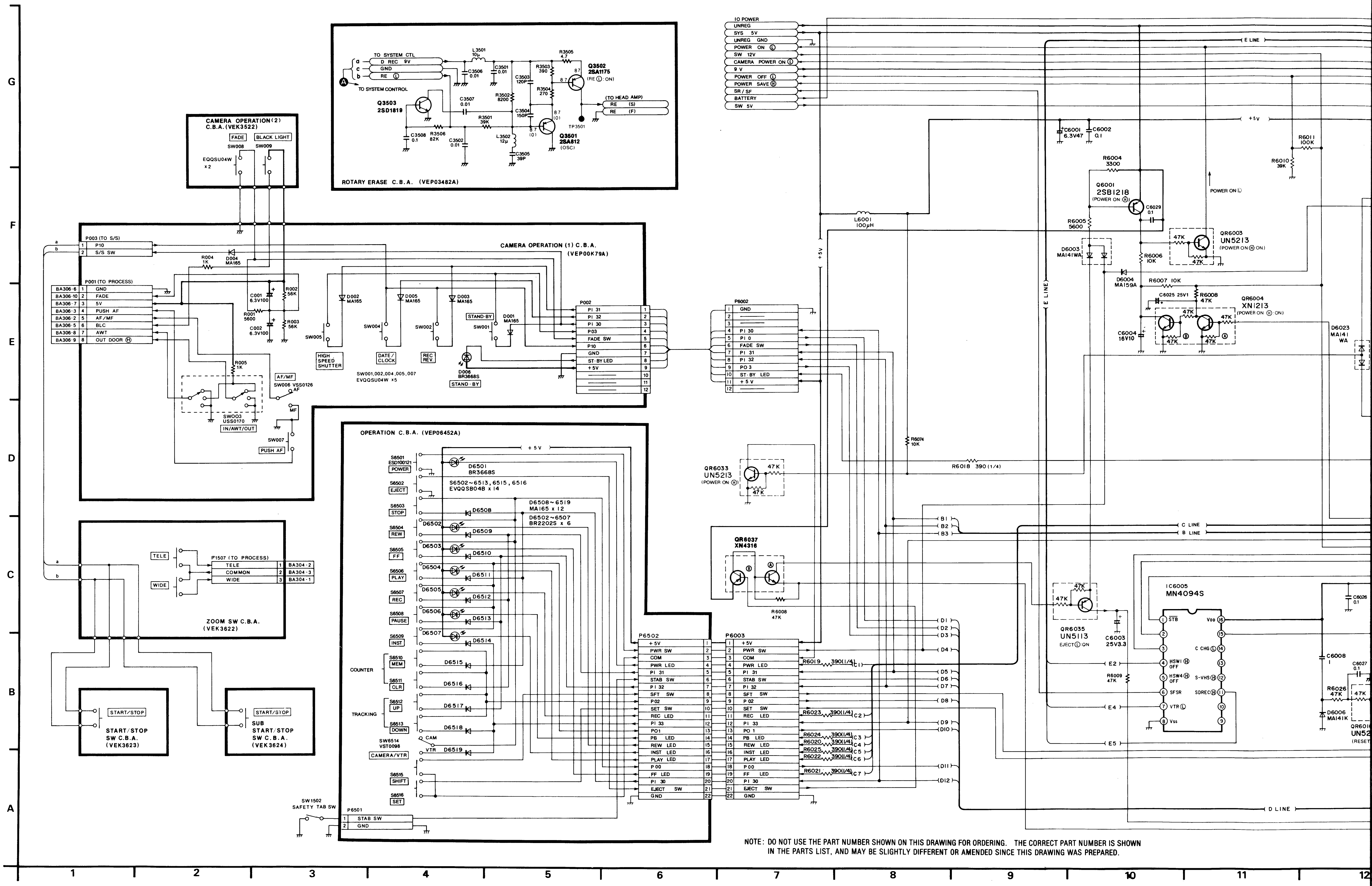
SYSTEM CONTROL ICs VOLTAGE CHART

REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	0.2	0	0	4.8	4.9	4.9	4.9	0	0.3	4.9	4.8	2.5	2.0	4.8	3.7	3.8	3.8	3.8
PLAY	0	0	0.2	0	0	4.7	4.9	4.9	4.9	0	0.4	0.5	4.8	2.5	2.0	4.9	3.8	0.3	3.8	3.8
REC	0	0	0.2	0	0	4.8	4.9	4.9	4.9	0	0.3	4.9	4.8	2.5	2.0	4.8	0.4	0.3	3.8	3.8
F.F	0	0	0.2	0	0	4.8	4.9	4.9	4.9	0	0.3	4.9	4.8	2.5	2.0	4.8	3.7	3.8	0.3	3.8
REW	0	0	0.3	0	0	4.8	4.9	4.9	4.9	0	0.3	—	4.8	2.5	2.0	4.8	3.7	3.8	3.8	0.3
REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0.3	0	0	3.7	3.8	3.8	3.9	4.0	4.9	4.7	4.9	4.9	0	0	0	0.1	4.9	0	4.9	4.7
PLAY	0.3	0	0	3.8	3.8	3.8	3.9	4.6	4.9	4.7	4.9	4.9	0	0	0.1	0.1	0	0	0	4.8
REC	0.4	0	0	3.7	0	3.8	3.9	—	4.9	4.7	4.9	4.9	0	0.1	0.1	0.1	4.9	0.1	4.9	4.9
F.F	0.3	0	0	3.7	3.8	3.7	0	0	4.9	4.7	4.8	4.9	0	0	0.1	0.1	4.9	0	4.9	4.7
REW	0.3	0	0	3.7	3.8	3.8	0	4.0	4.9	4.7	0	0	0.1	0.1	0.1	0.1	4.9	0	4.9	4.7
REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	0	2.2	4.7	0	0.4	4.8	4.8	4.8	4.8	4.8	4.8	4.9	4.8	4.8	4.9	4.9	4.9	4.9	0.1
PLAY	0	0	0	4.7	—	—	4.9	4.9	4.9	4.9	4.9	4.8	0	0	4.8	0.3	0.1	0.2	0.1	0.1
REC	−0.3	−0.1	2.2	4.7	—	—	4.9	4.9	4.9	4.9	4.9	4.8	4.9	4.8	4.7	4.8	4.9	4.9	0.1	0.1
F.F	0	0	2.2	4.7	0	—	4.9	4.9	4.9	4.9	4.9	4.8	4.9	4.8	4.8	4.8	4.9	4.9	4.9	0.1
REW	0	0	2.2	4.7	0	—	4.9	4.9	4.9	4.9	4.9	4.8	4.9	4.8	4.8	4.8	4.9	4.9	4.9	0.1
REF. NO.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0.1	4.9	2.4	0	0	4.9	4.9	0.3	0	0.3	0.3	0.3	0	0	−0.1	0	0.1	0.1	0.1	0
PLAY	0.1	4.9	2.4	−0.2	0	4.9	4.9	—	3.7	8.8	8.8	5.7	8.7	2.4	0	4.9	0	4.9	2.5	2.5
REC	0.1	0.1	2.4	0	0	4.9	4.9	—	3.6	0.3	0.3	0.1	8.7	2.4	0	4.9	4.9	4.9	2.5	4.9
F.F	0.1	4.9	2.4	0	0	4.9	4.9	—	3.6	8.8	8.8	5.7	6.8	2.4	0	0	0	2.5	2.5	4.9
REW	0.1	4.9	2.4	0	0	4.9	4.9	—	3.6	8.8	8.8	5.7	6.8	2.4	0	0	0	2.5	4.9	4.9
REF. NO.	IC6001																			
MODE	81	82	83	84																
STOP	0.1	0.1	0	0																
PLAY	4.9	0	0	0																
REC	4.9	0	0.3	0.4																
F.F	4.9	4.9	0	0																
REW	4.9	4.9	0	0																
REF. NO.	IC6002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	0	0.4	0	0	−0.1	0.2	0	0	0	4.7	0	4.9	0	0						
PLAY	0	0.5	0	0	−0.1	0.2	0	0	0	4.7	0	4.9	0	0						
REC	0	0.4	0	0	−0.1	0.2	0	0	0	4.7	0	4.9	0	0.4						
F.F	0	0.4	0	0	−0.1	0.2	0	−0.1	−0.1	4.8	0	4.9	0	0						
REW	0	0.4	0	0	−0.1	0.2	0	0	0	4.7	0	4.9	0	0.3						
REF. NO.	IC6003										IC6004									
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8	9	
STOP	4.7	4.2	4.4	0	0.7	0	4.7	13.0			6.9	13.2	0.4	0	0	0	0.3	13.2	6.9	
PLAY	4.7	4.2	4.5	0	0.7	0	4.7	13.3			6.8	13.4	0.5	0	0	0	0.5	13.4	6.8	
REC	4.7	4.2	4.4	0	0.7	0	4.7	12.9			6.9	13.0	0.5	0	0	0	0.3	13.0	6.9	
F.F	4.7	4.1	4.4	0	0.7	0	4.7	12.9			6.8	13.0	0.4	0	0	0	0.3	13.0	6.8	
REW	4.7	4.2	4.4	0	0.7	0	4.7	12.8			6.9	13.0	0.4	0	0	0	0.4	13.0	6.8	
REF. NO.	IC6005																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	4.7	0.1	0.1	0	0	5.0	5.0	0	0.1	0.1	0	0	4.6	5.0	4.9	5.0				
PLAY	4.7	0.1	0.1	0	0	5.0	5.0	0	0.1	0.1	1.8	4.9	4.9	0	4.9	5.0				
REC	4.9	0.1	0.1	0	0	5.0	0	0	5.0	5.0	5.0	0	0	5.0	4.9	5.0				
F.F	4.7	0.1	0.1	0	0	5.0	5.0	0	0.1	0.1	1.8	1.8	4.6	5.0	4.9	5.0				
REW	4.7	0.1	0.1	0	0	5.0	5.0	0	0.1	0.1	0	1.8	4.6	4.9	4.9	5.0				

SYSTEM CONTROL TRANSISTORs VOLTAGE CHART

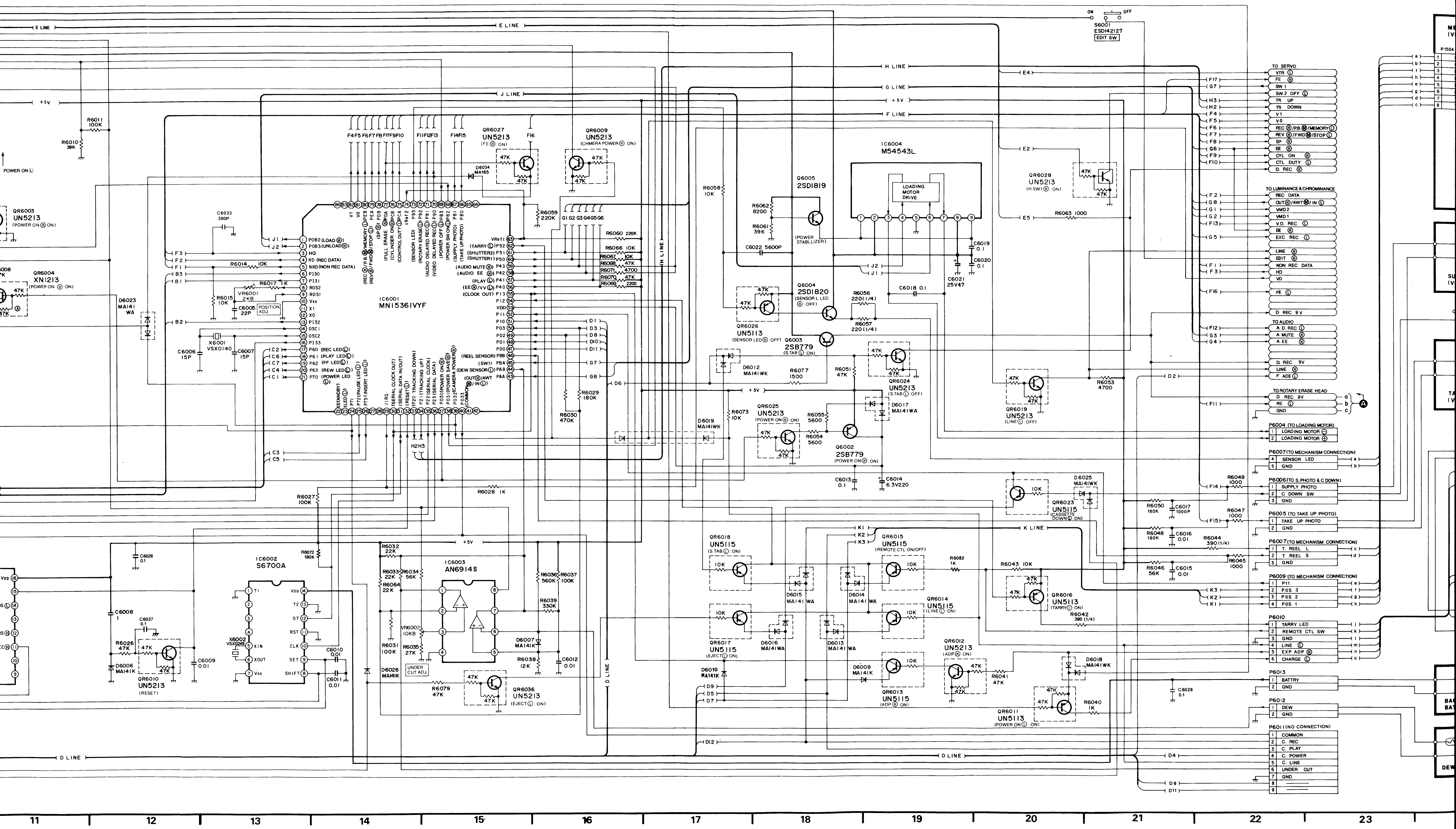
REF. NO.	Q6001			Q6002			Q6003			Q6004			Q6005					
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B			
STOP	13.1	8.7	13.1	5.0	4.9	4.3	8.8	8.8	8.0	−0.4	13.1	−0.2	6.9	8.8	7.3			
PLAY	13.4	8.9	13.4	5.0	5.0	4.3	8.8	8.8	8.0	−0.5	−0.1	−0.3	6.8	8.8	7.3			
REC	13.0	8.6	13.0	5.0	4.9	4.3	8.7	8.7	8.0	−0.4	13.0	−0.2	6.9	8.8	7.3			
F.F	13.1	8.7	13.1	5.0	4.9	4.3	8.8	8.8	8.1	2.0	13.1	2.2	6.8	8.8	7.3			
REW	13.0	8.6	13.0	5.0	4.9	4.3	8.8	8.8	8.1	2.0	13.0	2.2	6.8	8.8	7.3			
REF. NO.	QR6003			QR6004 Ⓐ			QR6004 Ⓑ			QR6009			QR6010			QR6011		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	0	8.7	0	10.8	0	0	0	4.9	0	0.1	4.9	0	4.9	0	12.5	12.5	0
PLAY	0	0	8.9	0	11.0	0	0	0	4.9	0	5.0	0.1	0	4.9	0	12.5	12.4	0
REC	0	0	8.6	0	10.7	0	0	0	4.9	0	0.1	4.9	0	4.9	0	12.5	12.4	0
F.F	0	0	8.7	0	10.8	0	0	0	4.9	0	0.1	4.9	0	4.9	0	12.5	12.4	0
REW	0	0	8.7	0	10.8	0	0	0	4.9	0	0.1	4.9	0	4.9	0	12.5	12.4	0
REF. NO.	QR6012			QR6013			QR6014			QR6015			QR6016			QR6017		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	0	6.1	4.8	4.8	0	4.6	4.8	4.8	4.6	4.8	4.9	5.0	0	4.9	4.6	4.8	4.4
PLAY	0	0	6.2	4.8	4.8	0	4.8	4.8	4.2	4.6	4.8	5.0	5.0	0	4.9	4.6	4.8	4.4
REC	0	0	6.0	4.7	4.7	0	4.6	4.7	4.8	4.6	4.8	4.9	5.0	4.9	0.1	4.6	4.8	4.4
F.F	0	0	6.1	4.7	4.7	0	4.6	4.8	4.8	4.6	4.8	4.9	5.0	−0.2	4.9	4.6	4.8	4.4
REW	0	0	6.1	4.7	4.7	0	4.5	4.7	4.8	4.6	4.8	4.9	5.0	−0.1	4.9	4.6	4.8	4.4
REF. NO.	QR6018			QR6019			QR6023			QR6024			QR6025			QR6026		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	4.8	4.8	0.5	0	0	4.4	4.8	4.8	0.5	0	0	0.4	0	0	4.8	8.8	−0.2	8.7
PLAY	4.8	4.8	0.5	0	0	3.8	4.8	4.8	0.5	0	0	0.4	0	0	4.9	8.8	−0.4	8.7
REC	4.8	4.8	0.5	0	0	4.4	4.8	4.8	0.5	0	5.0	0.4	0	0	4.9	8.8	−0.1	8.7
F.F	4.8	4.8	0.5	0	0	4.4	4.8	4.8	0.5	0	0	0.4	0	0	4.9	8.8	2.5	7.2
REW	4.8	4.8	0.5	0	0	4.4	4.8	4.8	0.5	0	0	0.4	0	0	4.9	8.8	2.2	7.2
REF. NO.	QR6027			QR6028			QR6033			QR6035			QR6036					
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B			
STOP	0	8.7	0	0	0	0	0	0	4.0	12.7	0	12.6	0	4.4	0			
PLAY	0	8.7	0.1	0	—	0	0	0.7	0.7	12.9	0	12.8	0	4.4	0			
REC	0.8	0.9	4.9	0	—	0	0	0	0.8	12.7	0	12.5	0	4.4	0			
F.F	0	8.7	0	0	0	0	0	0	4.0	12.8	0	12.7	0	4.4	0			
REW	0	8.7	0	0	0	0	0	0	4.0	12.8	0	12.6	0	4.4	0			
REF. NO.	QR6037 Ⓐ			QR6037 Ⓑ														
MODE	E	C	B	E	C	B												
STOP	13.1	−0.2	—	12.6	−0.3	−0.4												
PLAY	13.3	−0.6	—	−0.4	12.8	−0.4												
REC	13.0	−0.3	—	−0.6	12.5	−0.4												
F.F	13.2	−0.4	—	−0.4	12.7	−0.4												
REW	13.1	−0.6	—	−0.6	12.7	−0.5												

3-18. SYSTEM CONTROL, OPERATION & CAMERA OPERATION (I), (II) SCHEMATIC DIAGRAM

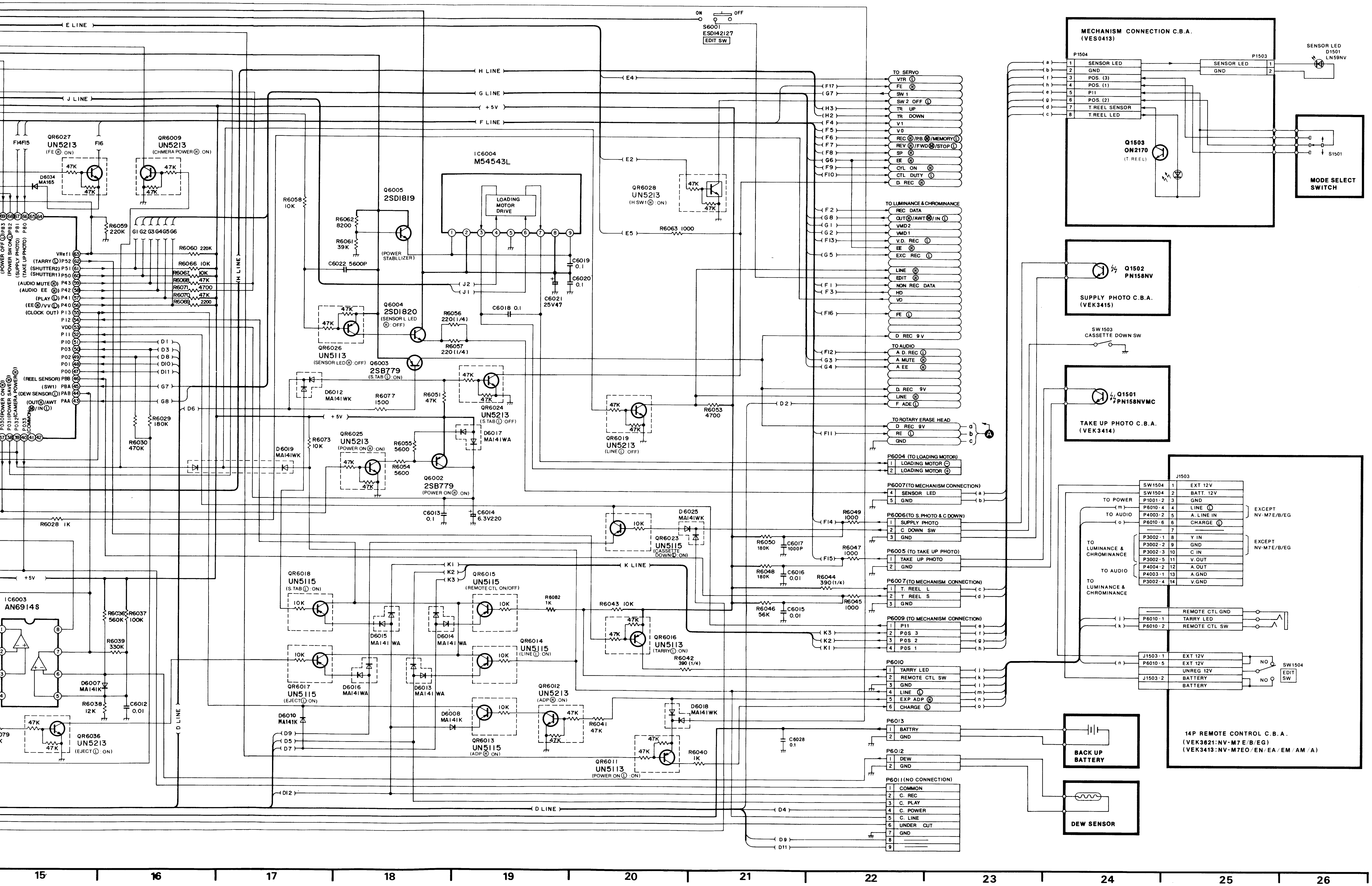

ROTARY ERASE C.B.A. (VEP03482A)
TO SYSTEM CTL
D REC 9V
GND
RE ⓛ
TO SYSTEM CONTROL
(TO HEAD AMP)
RE (S)
RE (F)
Q3502 2SA1175 (RE Ⓛ: ON)
Q3503 2SD1819
Q3501 2SA812 (OSC)
TP3501
CAMERA OPERATION (2) C.B.A. (VEK3522)
FADE
BLACK LIGHT
SW008
SW009
EQQSU04W x 2
CAMERA OPERATION (1) C.B.A. (VEP00K79A)
P003 (TO S/S)
P10
S/S SW
P001 (TO PROCESS)
GND
FADE
5V
PUSH AF
AF/MF
BLC
AWT
OUT DOOR Ⓗ
HIGH SPEED SHUTTER
DATE/CLOCK
REC REV.
STAND-BY
SW001,002,004,005,007 EVQQSU04W x5
AF/MF
SW006 VSS0126
SW003 USS0170
IN/AWT/OUT
SW007
PUSH AF
D006 BR3668S
P002
ST-BY LED
ZOOM SW C.B.A. (VEK3622)
TELE
WIDE
P1507 (TO PROCESS)
COMMON
START/STOP SW C.B.A. (VEK3623)
SUB START/STOP SW C.B.A. (VEK3624)
START/STOP
OPERATION C.B.A. (VEP06452A)
POWER
EJECT
STOP
REW
FF
PLAY
REC
PAUSE
INST
MEM
CLR
COUNTER
UP
DOWN
TRACKING
CAMERA/VTR
SHIFT
SET
D6501 BR3668S
S6502~6513,6515,6516 EVQQS804B x 14
D6508~6519 MA165 x 12
D6502~6507 BR2202S x 6
SW1502 SAFETY TAB SW
P6501
STAB SW
P6502
P6003
PWR SW
COM
PWR LED
STAB SW
SFT SW
SET SW
REC LED
PB LED
REW LED
INST LED
PLAY LED
FF LED
EJECT SW
P6002
IO POWER
UNREG
SYS 5V
UNREG GND
POWER ON Ⓛ
SW 12V
CAMERA POWER ON Ⓛ
9 V
POWER OFF Ⓛ
POWER SAVE Ⓗ
SR / SF
BATTERY
SW 5V
E LINE
C LINE
B LINE
D LINE
+5V
L6001 100μH
Q6001 2SB1218 (POWER ON Ⓗ)
QR6003 UN5213 (POWER ON Ⓗ ON)
QR6004 XN1213 (POWER ON Ⓗ ON)
D6003 MA141WA
D6004 MA159A
POWER ON Ⓛ
QR6033 UN5213 (POWER ON Ⓗ)
QR6037 XN4316
QR6035 UN5113 EJECT Ⓛ ON
IC6005 MN4094S
STB
VDD
C CHG Ⓛ
HSW1 Ⓗ OFF
HSW4 Ⓗ OFF
S-VHS Ⓗ
SFSR
SDREC Ⓗ
VTR Ⓛ
VSS
D6006 MA141K
D6023 MA141 WA
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

SY



E LINE
H LINE
G LINE
J LINE
F LINE
D LINE
K LINE
+5V
POWER ON Ⓛ
R6011 100K
R6010 39K
QR6003 UN5213 (POWER ON Ⓗ ON)
QR6004 XN1213 (POWER ON Ⓗ ON)
D6023 MA141WA
QR6027 UN5213 (FE Ⓗ ON)
QR6009 UN5213 (CHMERA POWER Ⓗ ON)
D6034 MA165
C6033 390P
R6059 220K
IC6001 MN15361VYF
P0B2 (LOAD Ⓗ)
P0B3 (UNLOAD Ⓗ)
HQ
RD (REC DATA)
NRD (NON REC DATA)
P130
P131
ROS2
ROS1
Vss
X1
X0
P132
OSC1
OSC2
P133
P60 (REC LED Ⓛ)
P61 (PLAY LED Ⓛ)
P62 (FF LED Ⓛ)
P63 (REW LED Ⓛ)
P70 (POWER LED Ⓛ)
VRef1
(TARRY Ⓛ) P52
(SHUTTER2) P51
(SHUTTER1) P50
(AUDIO MUTE Ⓗ) P43
(AUDIO EE Ⓗ) P42
(PLAY Ⓛ) P41
(EE Ⓗ/VV Ⓛ) P40
(CLOCK OUT) P13
P12
VDD
P11
P10
P03
P02
P01
P00
(REEL SENSOR) PB8
(SW1) PBA
DEW SENSOR PA8
(OUT Ⓗ/AWT Ⓗ/IN Ⓛ) PAA
R6014 10K
R6017 1K
VR6001 2KB
POSITION ADJ.
R6015 10K
C6005 22P
X6001 VSX0140
C6006 15P
C6007 15P
R6060 220K
R6066 10K
R6061 10K
R6068 47K
R6071 4700
R6070 47K
R6069 2200
R6029 180K
R6030 470K
R6027 100K
R6028 1K
IC6002 S6700A
T1
VDD
T2
DT
RST
CLK
SET
SHIFT
XIN
XOUT
Vss
X6002 VSX0248
C6008 1
C6027 0.1
R6026 47K
D6006 MA141K
QR6010 UN5213 (RESET)
C6009 0.01
C6010 0.01
C6011 0.01
R6072 180K
C6026 0.1
IC6003 AN6914S
R6032 22K
R6033 22K
R6034 56K
R6064 22K
R6031 100K
VR6002 10KB
R6035 27K
UNDER CUT ADJ.
D6026 MA141K
R6079 47K
QR6036 UN5213 (EJECT Ⓛ ON)
R6036 560K
R6037 100K
R6039 330K
D6007 MA141K
R6038 12K
C6012 0.01
R6058 10K
R6062 8200
R6061 39K
Q6005 2SD1819 (POWER STABLLIZER)
C6022 5600P
IC6004 M54543L
LOADING MOTOR DRIVE
C6019 0.1
C6020 0.1
C6021 25V47
C6018 0.1
QR6026 UN5113 (SENSOR LED Ⓗ OFF)
Q6004 2SD1820 (SENSOR L LED Ⓗ OFF)
R6056 220 (1/4)
R6057 220 (1/4)
Q6003 2SB779 (S.TAB Ⓛ ON)
D6012 MA141WK
R6077 1500
R6051 47K
QR6024 UN5213 (S.TAB Ⓛ OFF)
D6017 MA141WA
D6019 MA141WK
R6073 10K
QR6025 UN5213 (POWER ON Ⓗ ON)
R6055 5600
R6054 5600
Q6002 2SB779 (POWER ON Ⓗ ON)
C6013 0.1
C6014 6.3V220
QR6018 UN5115 (S.TAB Ⓛ ON)
QR6015 UN5115 (REMOTE CTL ON/OFF)
D6015 MA141WA
D6014 MA141WA
R6082 1K
QR6017 UN5115 (EJECT Ⓛ ON)
D6016 MA141WA
D6013 MA141WA
QR6014 UN5115 (LINE Ⓛ ON)
D6010 MA141K
D6008 MA141K
QR6013 UN5115 (ADP Ⓗ ON)
QR6012 UN5213 (ADP Ⓗ ON)
R6041 47K
D6018 MA141WK
QR6011 UN5113 (POWER ON Ⓛ ON)
R6040 1K
S6001 ESD142127 EDIT SW
ON
OFF
QR6028 UN5213 (H SW1 Ⓗ ON)
R6063 1000
QR6019 UN5213 (LINE Ⓛ OFF)
R6053 4700
D6025 MA141WK
QR6023 UN5115 (CASSETTE DOWN Ⓛ ON)
R6050 180K
C6017 1000P
R6049 1000
R6047 1000
R6048 180K
C6016 0.01
R6044 390 (1/4)
R6046 56K
C6015 0.01
R6045 1000
R6043 10K
QR6016 UN5113 (TARRY Ⓛ ON)
R6042 390 (1/4)
C6028 0.1
TO SERVO
VTR Ⓛ
FE Ⓗ
SW 1
SW 2 OFF Ⓛ
TR UP
TR DOWN
V1
V0
REC Ⓗ/PB Ⓜ/MEMORY Ⓛ
REV Ⓗ/FWD Ⓜ/STOP Ⓛ
SP Ⓗ
EE Ⓗ
CYL ON Ⓗ
CTL DUTY Ⓛ
D. REC Ⓗ
TO LUMINANCE & CHROMINANCE
REC DATA
OUT Ⓗ/AWT Ⓜ/IN Ⓛ
VMD2
VMD1
V.D. REC Ⓛ
EE Ⓗ
EXC REC Ⓛ
LINE Ⓗ
EDIT Ⓗ
NON REC DATA
HD
VD
FE Ⓛ
D. REC 9V
TO AUDIO
A. D. REC Ⓛ
A. MUTE Ⓗ
A. EE Ⓗ
D. REC 9V
LINE Ⓗ
F. ADE Ⓛ
TO ROTARY ERASE HEAD
D. REC 9V
RE Ⓛ
GND
Ⓐ
P6004 (TO LOADING MOTOR)
LOADING MOTOR ⊖
LOADING MOTOR ⊕
P6007 (TO MECHANISM CONNECTION)
SENSOR LED
GND
P6006 (TO S. PHOTO & C DOWN)
SUPPLY PHOTO
C DOWN SW
GND
P6005 (TO TAKE UP PHOTO)
TAKE UP PHOTO
GND
P6007 (TO MECHANISM CONNECTION)
T. REEL L
T. REEL S
GND
P6009 (TO MECHANISM CONNECTION)
P11
POS 3
POS 2
POS 1
P6010
TARRY LED
REMOTE CTL SW
GND
LINE Ⓛ
EXP ADP Ⓗ
CHARGE Ⓛ
P6013
BATTRY
GND
P6012
DEW
GND
P6011 (NO CONNECTION)
COMMON
C. REC
C. PLAY
C. POWER
C. LINE
UNDER CUT
GND
P1504
11
12
13
14
15
16
17
18
19
20
21
22
23

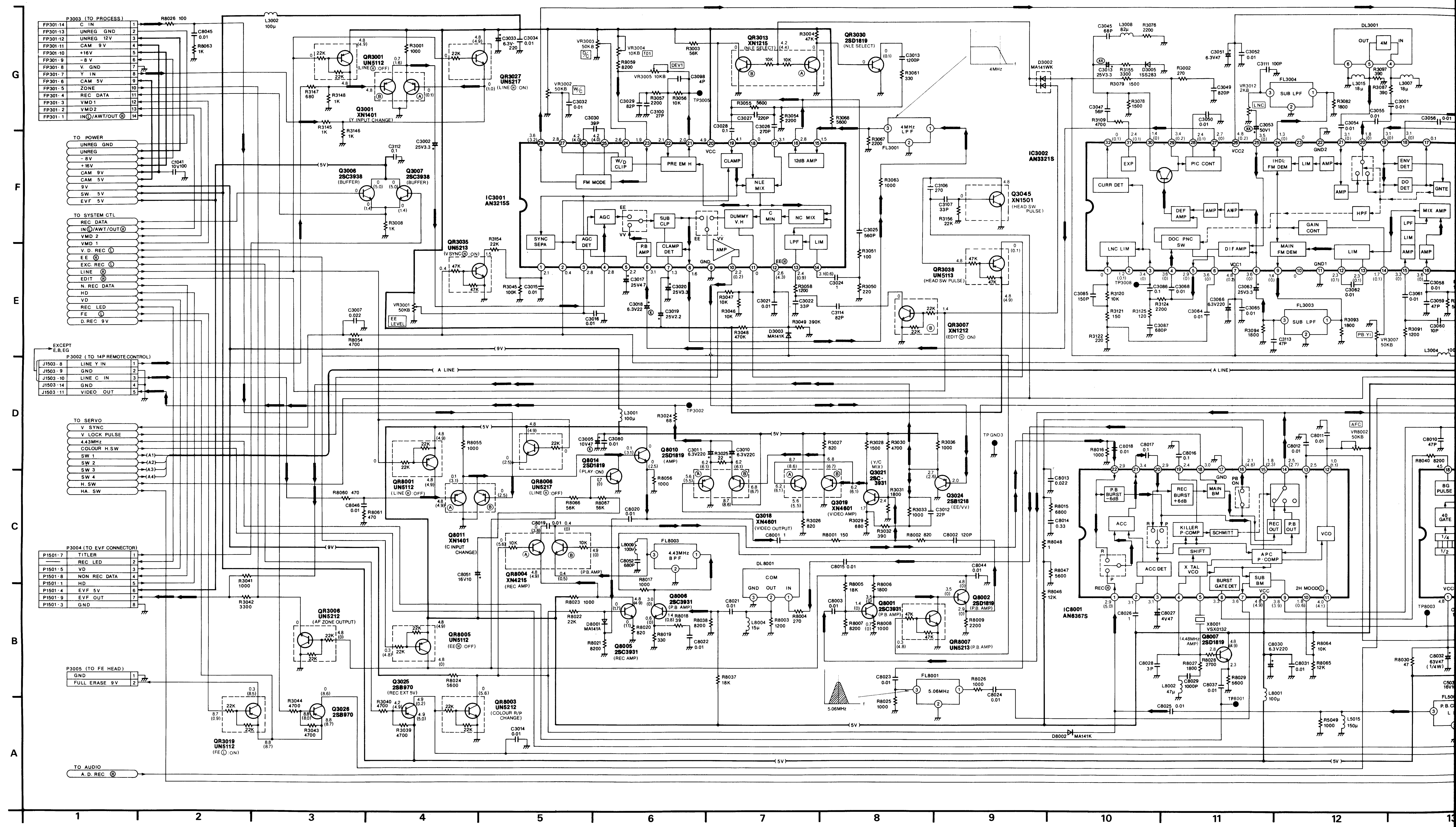

E LINE
H LINE
G LINE
J LINE
F LINE
D LINE
K LINE
+5V
S6001 ESD142127 EDIT SW
ON
OFF
QR6027 UN5213 (FE Ⓗ : ON)
QR6009 UN5213 (CHMERA POWER Ⓗ : ON)
D6034 MA165
F14 F15
F16
R6059 220K
IC6004 M54543L
LOADING MOTOR DRIVE
Q6005 2SD1819 (POWER STABLIZER)
R6062 8200
R6061 39K
R6058 10K
C6022 5600P
C6019 0.1
C6020 0.1
C6021 25V47
C6018 0.1
Q6004 2SD1820 (SENSOR L LED Ⓗ : OFF)
R6056 220 (1/4)
R6057 220 (1/4)
QR6026 UN5113 (SENSOR LED Ⓗ : OFF)
Q6003 2SB779 (S.TAB Ⓛ : ON)
D6012 MA141WK
R6077 1500
R6051 47K
QR6024 UN5213 (S.TAB Ⓛ : OFF)
D6017 MA141WA
QR6025 UN5213 (POWER ON Ⓗ : ON)
R6055 5600
R6054 5600
Q6002 2SB779 (POWER ON Ⓗ : ON)
C6013 0.1
C6014 6.3V220
QR6028 UN5213 (H SW1 Ⓗ : ON)
R6063 1000
QR6019 UN5213 (LINE Ⓛ : OFF)
R6053 4700
R6060 220K
R6066 10K
R6067 10K
R6068 47K
R6071 4700
R6070 47K
R6069 2200
R6029 180K
R6030 470K
R6073 10K
D6019 MA141WK
R6028 1K
IC6003 AN6914S
R6036 560K
R6037 100K
R6039 330K
D6007 MA141K
R6038 12K
C6012 0.01
QR6036 UN5213 (EJECT Ⓛ : ON)
QR6018 UN5115 (S.TAB Ⓛ : ON)
QR6015 UN5115 (REMOTE CTL ON/OFF)
D6015 MA141WA
D6014 MA141WA
R6082 1K
R6043 10K
QR6016 UN5113 (TARRY Ⓛ : ON)
R6042 390 (1/4)
QR6017 UN5115 (EJECT Ⓛ : ON)
D6016 MA141WA
D6013 MA141WA
QR6014 UN5115 (LINE Ⓛ : ON)
D6010 MA141K
D6008 MA141K
QR6013 UN5115 (ADP Ⓗ : ON)
QR6012 UN5213 (ADP Ⓗ : ON)
R6041 47K
D6018 MA141WK
QR6011 UN5113 (POWER ON Ⓛ : ON)
R6040 1K
QR6023 UN5115 (CASSETTE DOWN Ⓛ : ON)
D6025 MA141WK
R6050 180K
C6017 1000P
R6048 180K
C6016 0.01
R6046 56K
C6015 0.01
R6049 1000
R6047 1000
R6044 390 (1/4)
R6045 1000
C6028 0.1
VRef1 (TARRY Ⓛ) P52 (SHUTTER2) P51 (SHUTTER1) P50 (AUDIO MUTE Ⓗ) P43 (AUDIO EE Ⓗ) P42 (PLAY Ⓛ) P41 (EE Ⓗ/VV Ⓛ) P40 (CLOCK OUT) P13 P12 VDD P11 P10 P03 P02 P01 P00 (REEL SENSOR) PBB (SW1) PBA (DEW SENSOR Ⓛ) PAB (OUT Ⓗ/AWT Ⓗ/IN Ⓛ) PAA
(POWER OFF Ⓛ) P83 (POWER SAVE Ⓗ) P82 (SUPPLY PHOTO) P81 (TAKE UP PHOTO) P80
P030 (POWER ON Ⓗ) P031 (POWER SAVE Ⓗ) P032 (CAMERA POWER Ⓗ) P033 (COMMON)
G1 G2 G3 G4 G5 G6
TO SERVO: VTR Ⓛ, FE Ⓗ, SW1, SW2 OFF Ⓛ, TR UP, TR DOWN, V1, V0, REC Ⓗ/PB Ⓜ/MEMORY Ⓛ, REV Ⓗ/FWD Ⓜ/STOP Ⓛ, SP Ⓗ, EE Ⓗ, CYL ON Ⓗ, CTL DUTY Ⓛ, D. REC Ⓗ
TO LUMINANCE & CHROMINANCE: REC DATA, OUT Ⓗ/AWT Ⓜ/IN Ⓛ, VMD2, VMD1, V.D. REC Ⓛ, EE Ⓗ, EXC REC Ⓛ, LINE Ⓗ, EDIT Ⓗ, NON REC DATA, HD, VD, FE Ⓛ, D. REC 9V
TO AUDIO: A.D. REC Ⓛ, A MUTE Ⓗ, A EE Ⓗ, D. REC 9V, LINE Ⓗ, F ADE Ⓛ
TO ROTARY ERASE HEAD: D. REC 9V, RE Ⓛ, GND
P6004 (TO LOADING MOTOR): 1 LOADING MOTOR ⊖, 2 LOADING MOTOR ⊕
P6007 (TO MECHANISM CONNECTION): 4 SENSOR LED, 5 GND
P6006 (TO S.PHOTO & C.DOWN): 1 SUPPLY PHOTO, 2 C. DOWN SW, 3 GND
P6005 (TO TAKE UP PHOTO): 1 TAKE UP PHOTO, 2 GND
P6007 (TO MECHANISM CONNECTION): 1 T. REEL L, 2 T. REEL S, 3 GND
P6009 (TO MECHANISM CONNECTION): 1 P11, 2 POS 3, 3 POS 2, 4 POS 1
P6010: 1 TARRY LED, 2 REMOTE CTL SW, 3 GND, 4 LINE Ⓛ, 5 EXP ADP Ⓗ, 6 CHARGE Ⓛ
P6013: 1 BATTRY, 2 GND
P6012: 1 DEW, 2 GND
P6011 (NO CONNECTION): 1 COMMON, 2 C. REC, 3 C. PLAY, 4 C. POWER, 5 C. LINE, 6 UNDER CUT, 7 GND, 8, 9
MECHANISM CONNECTION C.B.A. (VES0413)
P1504: 1 SENSOR LED, 2 GND, 3 POS. (3), 4 POS. (1), 5 P11, 6 POS. (2), 7 T.REEL SENSOR, 8 T.REEL LED
P1503: 1 SENSOR LED, 2 GND
SENSOR LED D1501 LN59NV
Q1503 ON2170 (T. REEL)
MODE SELECT SWITCH
S1501
Q1502 PN158NV
SUPPLY PHOTO C.B.A. (VEK3415)
SW1503 CASSETTE DOWN SW
Q1501 PN158NVMC
TAKE UP PHOTO C.B.A. (VEK3414)
J1503
SW1504 1 EXT 12V; SW1504 2 BATT. 12V; P1001-2 3 GND; P6010-4 4 LINE Ⓛ; P4003-2 5 A. LINE IN; P6010-6 6 CHARGE Ⓛ; 7; P3002-1 8 Y IN; P3002-2 9 GND; P3002-3 10 C IN; P3002-5 11 V. OUT; P4004-2 12 A. OUT; P4003-1 13 A. GND; P3002-4 14 V. GND
TO POWER
TO AUDIO
TO LUMINANCE & CHROMINANCE
EXCEPT NV-M7E/B/EG
REMOTE CTL GND; P6010-1 TARRY LED; P6010-2 REMOTE CTL SW
J1503-1 EXT 12V; P6010-5 EXT 12V; UNREG 12V; J1503-2 BATTERY; BATTERY
NO
SW1504 EDIT SW
14P REMOTE CONTROL C.B.A. (VEK3621: NV-M7E/B/EG) (VEK3413: NV-M7EO/EN/EA/EM/AM/A)
BACK UP BATTERY
DEW SENSOR
15 16 17 18 19 20 21 22 23 24 25 26

Next Page:
LUMINANCE & CHROMINANCE Section

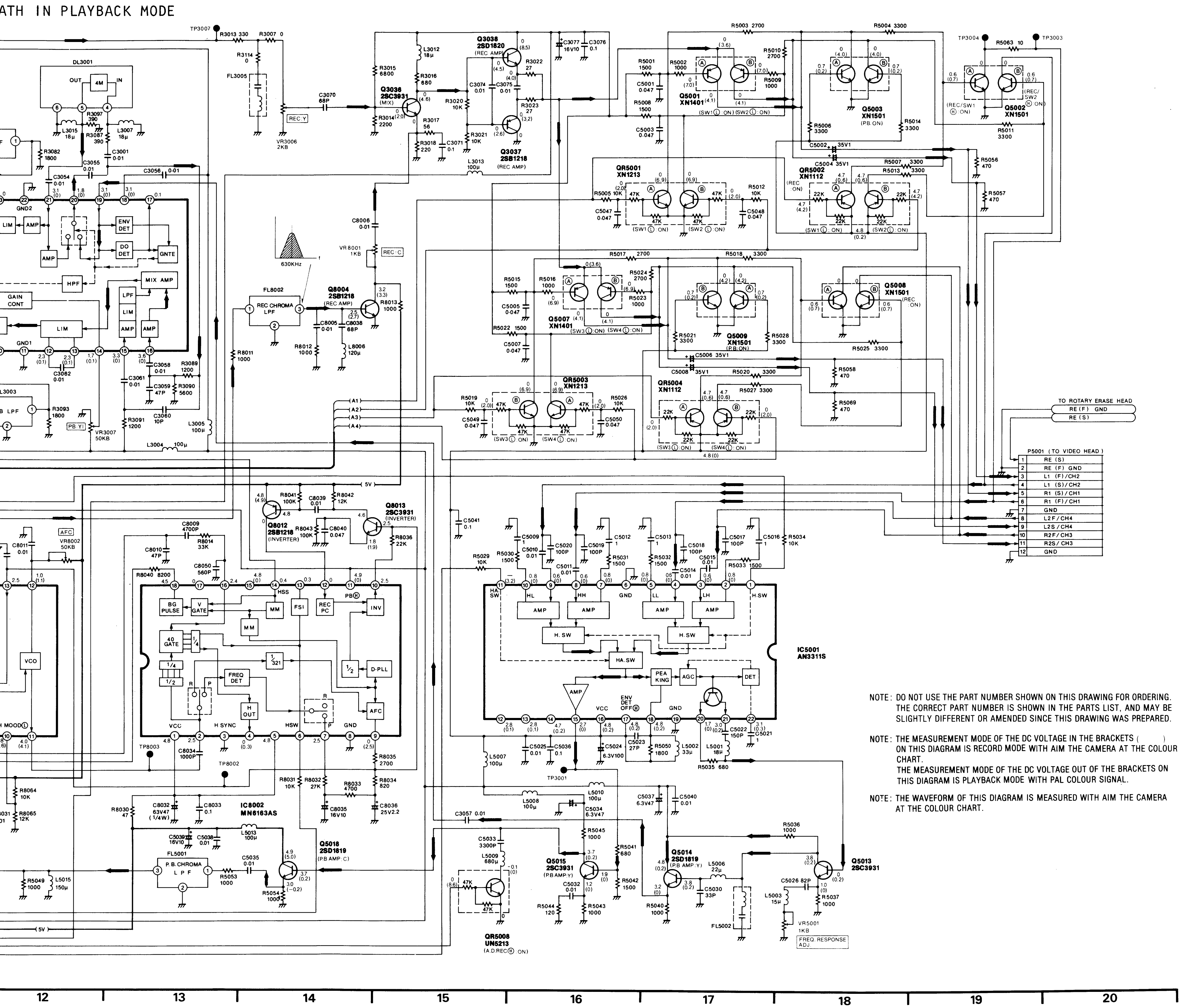
3-19. LUMINANCE, CHROMINANCE & HEAD AMP SCHEMATIC DIAGRAM

MAIN SIGNAL PATH IN REC MODE

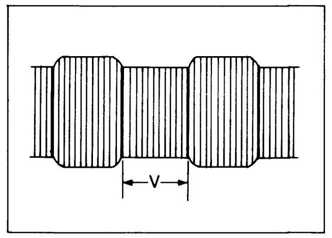
MAIN SIGNAL PATH IN PLAYBACK MODE


P3003 (TO PROCESS)
FP301-14 C IN
FP301-13 UNREG GND
FP301-12 UNREG 12V
FP301-11 CAM 9V
FP301-10 +16V
FP301-9 -8V
FP301-8 V. GND
FP301-7 Y IN
FP301-6 CAM 5V
FP301-5 ZONE
FP301-4 REC DATA
FP301-3 VMD 1
FP301-2 VMD 2
FP301-1 IN(I)/AWT/OUT(H)
TO POWER
UNREG GND
UNREG
-8V
+16V
CAM 9V
CAM 5V
9V
SW. 5V
EVF 5V
TO SYSTEM CTL
REC DATA
IN(I)/AWT/OUT(H)
VMD 2
VMD 1
V. D. REC (L)
EE (H)
EXC. REC (L)
LINE (H)
EDIT (H)
N. REC DATA
HD
VD
REC LED
FE (L)
D. REC 9V
EXCEPT E.B.EG
P3002 (TO 14P REMOTE CONTROL)
J1503-8 LINE Y IN
J1503-9 GND
J1503-10 LINE C IN
J1503-14 GND
J1503-11 VIDEO OUT
TO SERVO
V. SYNC
V. LOCK PULSE
4.43MHz
COLOUR H.SW
SW 1
SW 2
SW 3
SW 4
H. SW
HA. SW
P3004 (TO EVF CONNECTOR)
P1501-7 TITLER
REC LED
P1501-5 VD
P1501-8 NON REC DATA
P1501-1 HD
P1501-4 EVF 5V
P1501-9 EVF OUT
P1501-3 GND
P3005 (TO FE HEAD)
GND
FULL ERASE 9V
TO AUDIO
A. D. REC (H)
QR3001 UN5112
Q3001 XN1401 (Y INPUT CHANGE)
QR3027 UN5217
Q3006 2SC3938 (BUFFER)
Q3007 2SC3938 (BUFFER)
QR3035 UN5213
IC3001 AN3215S
SYNC SEPA
AGC DET
AGC
SUB CLP
P.B AMP
CLAMP DET
DUMMY V.H
C MIN
NC MIX
LPF
LIM
AMP
FM MODE
W/D CLIP
PRE EM H
CLAMP
NLE MIX
12dB AMP
QR3013 XN1215 (NLE SELECT)
QR3030 2SD1819 (NLE SELECT)
FL3001 4MHz LPF
Q3045 XN1501 (HEAD SW PULSE)
QR3038 UN5113 (HEAD SW PULSE)
QR3007 XN1212 (EDIT (H): ON)
D3003 MA141K
D3002 MA141WK
IC3002 AN3321S
EXP
PIC CONT
CURR DET
DEF AMP
DOC PNC SW
LNC LIM
DIF AMP
MAIN FM DEM
IHDL FM DEM
LIM
AMP
ENV DET
DO DET
GNTE
HPF
MIX AMP
GAIN CONT
LPF
FL3004 SUB LPF
FL3003 SUB LPF
DL3001
QR8001 UN5112
QR8006 UN5217
Q8011 XN1401 (C INPUT CHANGE)
Q8014 2SD1819 (PLAY: ON)
Q8010 2SD1819 (AMP)
Q3021 2SC3931 (Y/C MIX)
Q3019 XN4601 (VIDEO AMP)
Q3018 XN4601 (VIDEO OUTPUT)
Q3024 2SB1218 (EE/VV)
QR8004 XN4215 (REC AMP)
FL8003 4.43MHz B.P.F
DL8001 COM
Q8006 2SC3931 (P.B AMP)
Q8005 2SC3931 (REC AMP)
D8001 MA141A
Q8001 2SC3931 (P.B AMP)
Q8002 2SD1819 (P.B AMP)
QR8007 UN5213 (P.B AMP)
FL8001 5.06MHz
QR8005 UN5112 (EE(H): OFF)
QR3006 UN5212 (AF ZONE OUTPUT)
QR3019 UN5112 (FE(L): ON)
Q3026 2SB970
Q3025 2SB970 (REC EXT 5V)
QR8003 UN5212 (COLOUR R/P CHANGE)
IC8001 AN6367S
P.B BURST -6dB
REC BURST +6dB
MAIN BM
ACC
KILLER P-COMP
SCHMITT
ACC DET
SHIFT
X TAL VCO
BURST GATE DET
SUB BM
APC P-COMP
VCO
REC OUT
P.B OUT
Q8007 2SD1819
X8001 VSX0132
D8002 MA141K
TP3002
TP3005
TP3008
TP8001
TP8003
TPGND3
A LINE
(9V)
(5V)
1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G

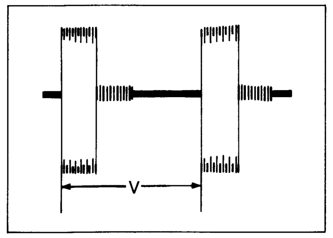
ATH IN PLAYBACK MODE


TP3007
R3013 330
R3007 0
R3114 0
FL3005
DL3001
OUT
4M
IN
R3097 390
R3087 390
L3015 18μ
L3007 18μ
R3082 1800
C3001 0.01
C3054 0.01
C3055 0.01
C3056 0.01
GND2
ENV DET
DO DET
GNTE
LIM
AMP
HPF
MIX AMP
GAIN CONT
LIM
LPF
GND1
C3058 0.01
R3089 1200
C3059 47P
R3090 5600
C3060 10P
R3091 1200
C3061 0.01
C3082 0.01
R3093 1800
PB Y
VR3007 50KB
L3005 100μ
L3004 100μ
VR3006 2KB
REC Y
C3070 68P
Q3036 2SC3931 (MIX)
R3015 6800
R3014 2200
L3012 18μ
R3016 680
R3017 56
R3018 220
C3071 0.1
Q3038 2SD1820 (REC AMP)
R3022 27
R3023 27
C3074 0.01
C3075 0.01
R3020 10K
R3021 10K
Q3037 2SB1218 (REC AMP)
L3013 100μ
C3077 16V10
C3076 0.1
C8006 0.01
VR8001 1KB
REC C
630KHz
FL8002
REC CHROMA LPF
Q8004 2SB1218 (REC AMP)
C8005 0.01
C8038 68P
R8013 1000
R8012 1000
L8006 120μ
R8011 1000
R5003 2700
R5004 3300
R5001 1500
R5002 1000
C5001 0.047
R5008 1500
C5003 0.047
Q5001 XN1401
(SW1 Ⓛ :ON) (SW2 Ⓛ :ON)
R5010 2700
R5009 1000
Q5003 XN1501 (PB ON)
R5006 3300
R5014 3300
C5002 35V1
TP3004
R5063 10
TP3003
(REC/SW1 Ⓗ :ON)
Q5002 XN1501
(REC/SW2 Ⓗ :ON)
R5011 3300
QR5001 XN1213
R5005 10K
C5047 0.047
R5012 10K
C5048 0.047
(SW1 Ⓛ :ON) (SW2 Ⓛ :ON)
QR5002 XN1112
C5004 35V1
R5007 3300
R5013 3300
R5056 470
R5057 470
(SW1 Ⓛ :ON) (SW2 Ⓛ :ON)
R5017 2700
R5018 3300
R5015 1500
R5016 1000
R5024 2700
R5023 1000
C5005 0.047
R5022 1500
C5007 0.047
Q5007 XN1401
(SW3 Ⓛ :ON) (SW4 Ⓛ :ON)
R5021 3300
Q5009 XN1501 (P.B ON)
R5028 3300
Q5008 XN1501 (REC ON)
R5025 3300
C5006 35V1
C5008 35V1
R5020 3300
R5058 470
R5027 3300
R5069 470
QR5003 XN1213
R5019 10K
C5049 0.047
R5026 10K
C5050 0.047
(SW3 Ⓛ :ON) (SW4 Ⓛ :ON)
QR5004 XN1112
(SW3 Ⓛ :ON) (SW4 Ⓛ :ON)
(A1) (A2) (A3) (A4)
TO ROTARY ERASE HEAD
RE (F) GND
RE (S)
P5001 (TO VIDEO HEAD)
1 RE (S)
2 RE (F) GND
3 L1 (F)/CH2
4 L1 (S)/CH2
5 R1 (S)/CH1
6 R1 (F)/CH1
7 GND
8 L2F/CH4
9 L2S/CH4
10 R2F/CH3
11 R2S/CH3
12 GND
5V
AFC
VR8002 50KB
C8011 0.01
R8041 100K
C8039 0.01
R8042 12K
Q8012 2SB1218 (INVERTER)
R8043 100K
C8040 0.047
Q8013 2SC3931 (INVERTER)
R8036 22K
C8009 4700P
R8014 33K
C8010 47P
R8040 8200
C8050 560P
BG PULSE
V GATE
HSS
MM
FSI
REC PC
PB Ⓗ
INV
40 GATE
1/4
1/321
1/2
D-PLL
1/4
1/2
FREQ DET
H OUT
AFC
VCO
H MOOD Ⓛ
VCC
H SYNC
HSW
GND
TP8003
C8034 1000P
TP8002
R8035 2700
R8034 820
R8031 10K
R8032 27K
R8033 4700
C8035 16V10
C8036 25V2.2
IC8002 MN6163AS
R8064 10K
R8065 12K
R8030 47
C8032 63V47 (1/4W)
C8033 0.1
C5039 16V10
C5038 0.01
L5013 100μ
FL5001
P.B. CHROMA LPF
C5035 0.01
R5053 1000
R5054 1000
Q5018 2SD1819 (PB AMP C)
R5049 1000
L5015 150μ
C5041 0.1
R5029 10K
R5030 1500
C5009 0.01
C5010 0.01
C5020 100P
C5036 0.1
C5011 0.01
C5019 100P
C5012 1
R5031 1500
C5013 1
R5032 1500
C5018 100P
C5015 0.01
C5014 0.01
C5017 100P
C5016 1
R5034 10K
R5033 1500
HA SW
HL
HH
GND
LL
LH
H.SW
AMP
H.SW
HA.SW
PEA KING
AGC
DET
AMP
VCC
ENV DET OFF Ⓗ
GND
IC5001 AN3311S
C5025 0.01
C5024 6.3V100
C5023 27P
R5050 1800
L5002 33μ
L5001 18μ
R5035 680
C5022 150P
C5021 1
L5007 100μ
TP3001
L5008 100μ
L5010 100μ
C5034 6.3V47
C5037 6.3V47
C5040 0.01
C3057 0.01
C5033 3300P
L5009 680μ
QR5008 UN5213 (A.D.REC Ⓗ :ON)
R5045 1000
Q5015 2SC3931 (PB AMP Y)
C5032 0.01
R5044 120
R5043 1000
R5041 680
R5042 1500
Q5014 2SD1819 (P.B AMP Y)
L5006 22μ
C5030 33P
R5040 1000
R5036 1000
Q5013 2SC3931
C5026 82P
R5037 1000
L5003 15μ
FL5002
VR5001 1KB
FREQ. RESPONSE ADJ.
12 13 14 15 16 17 18 19 20

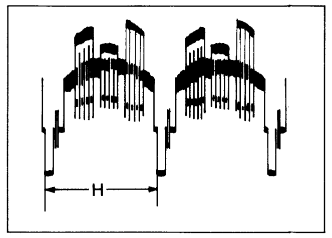
LUMINANCE & CHROMINANCE CIRCUIT TP (Test Point) WAVE FORM (REF No. 3000 Series)



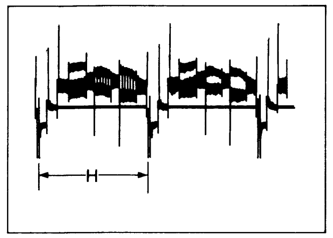
TP3001 PLAY
10mV/5msec. div. 0.2Vp-p



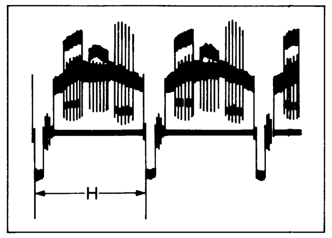
TP3003 REC
5mV/20msec. div. 0.2Vp-p



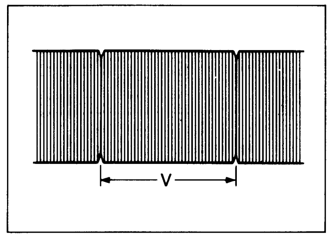
TP3002 REC
50mV/20μsec. div. 2Vp-p



TP3005 REC
20mV/20μsec. div. 0.8Vp-p

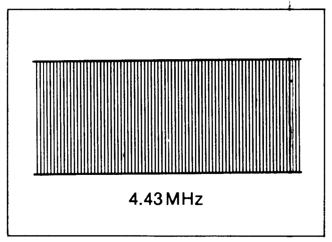


TP3002 PLAY
50mV/20μsec. div. 0.9Vp-p

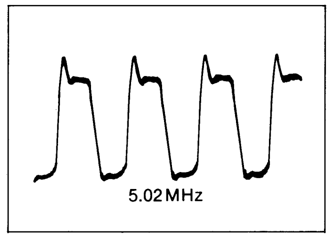


TP3007 REC
5mV/5msec. div. 180mVp-p

LUMINANCE & CHROMINANCE CIRCUIT TP (Test Point) WAVE FORM (REF No. 8000 Series)



TP8001 REC/PLAY
20mV/10μsec. div. 0.5Vp-p



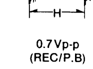
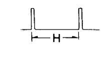
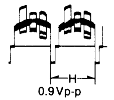
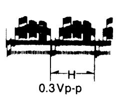
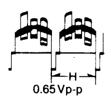
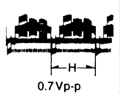
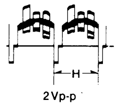
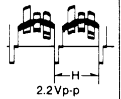
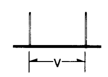
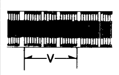
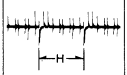
TP8003 REC/PLAY
20mV/1μsec. div. 0.7Vp-p

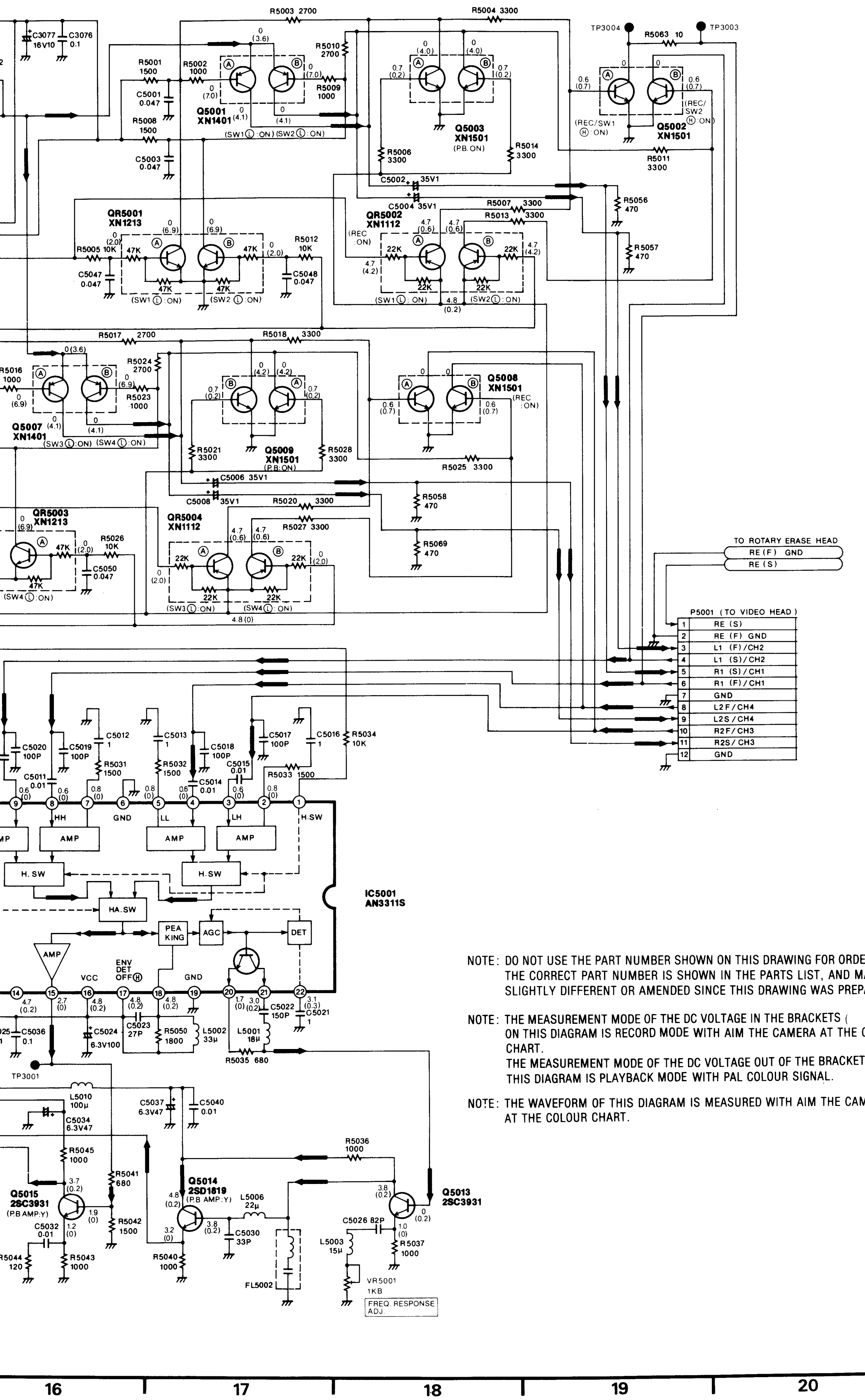
NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

NOTE: THE WAVEFORM OF THIS DIAGRAM IS MEASURED WITH AIM THE CAMERA AT THE COLOUR CHART.

IC3001 (AN3215S

PIN NO.	WAVEFORM
1	 H 0.7Vp-p (REC/P.B)
2	 H 5Vp-p (REC/P.B)
4	 H 0.9Vp-p (REC)
6	 H 0.3Vp-p (P.B)
8	 H 0.65Vp-p (REC)
8	 H 0.7Vp-p (P.B)
10	 H 2Vp-p (REC)
10	 H 2.2Vp-p (P.B)
11	 V 5Vp-p (P.B)
13	 V 1.3Vp-p (P.B)
14	 H 0.5Vp-p (REC)

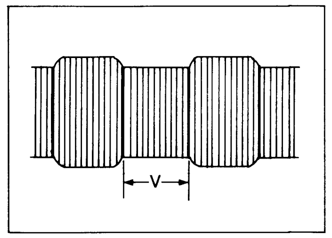

C3077 16V10
C3076 0.1
R5003 2700
R5004 3300
R5001 1500
R5002 1000
C5001 0.047
R5008 1500
C5003 0.047
Q5001 XN1401
R5010 2700
R5009 1000
(SW1Ⓛ:ON) (SW2Ⓛ:ON)
Q5003 XN1501 (P.B.ON)
R5006 3300
R5014 3300
C5002 35V1
C5004 35V1
TP3004
TP3003
R5063 10
Q5002 XN1501
(REC/SW1 Ⓗ:ON)
(REC/SW2 Ⓗ:ON)
R5011 3300
R5056 470
R5057 470
QR5001 XN1213
R5005 10K
C5047 0.047
R5012 10K
C5048 0.047
QR5002 XN1112
(REC :ON)
R5007 3300
R5013 3300
R5017 2700
R5018 3300
R5016 1000
R5024 2700
R5023 1000
Q5007 XN1401
(SW3Ⓛ:ON) (SW4Ⓛ:ON)
Q5009 XN1501 (P.B:ON)
R5021 3300
R5028 3300
Q5008 XN1501 (REC :ON)
R5025 3300
C5006 35V1
C5008 35V1
R5020 3300
R5027 3300
R5058 470
R5069 470
QR5003 XN1213
R5026 10K
C5050 0.047
QR5004 XN1112
4.8 (0)
TO ROTARY ERASE HEAD
RE (F) GND
RE (S)
P5001 (TO VIDEO HEAD)
1 RE (S)
2 RE (F) GND
3 L1 (F)/CH2
4 L1 (S)/CH2
5 R1 (S)/CH1
6 R1 (F)/CH1
7 GND
8 L2F/CH4
9 L2S/CH4
10 R2F/CH3
11 R2S/CH3
12 GND
C5020 100P
C5019 100P
C5012 1
C5013 1
C5018 100P
C5017 100P
C5016 1
R5034 10K
C5011 0.01
R5031 1500
R5032 1500
C5014 0.01
C5015 0.01
R5033 1500
HH
GND
LL
LH
H.SW
AMP
H. SW
HA.SW
PEA KING
AGC
DET
IC5001 AN3311S
VCC
ENV DET OFFⒽ
C5036 0.1
C5024 6.3V100
C5023 27P
R5050 1800
L5002 33µ
L5001 18µ
C5022 150P
C5021 1
R5035 680
TP3001
L5010 100µ
C5034 6.3V47
C5037 6.3V47
C5040 0.01
R5045 1000
R5041 680
R5036 1000
Q5015 2SC3931 (P.B AMP:Y)
C5032 0.01
R5044 120
R5043 1000
R5042 1500
Q5014 2SD1819 (P.B AMP:Y)
L5006 22µ
C5030 33P
R5040 1000
FL5002
C5026 82P
L5003 15µ
VR5001 1KB
FREQ. RESPONSE ADJ.
R5037 1000
Q5013 2SC3931
16
17
18
19
20

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

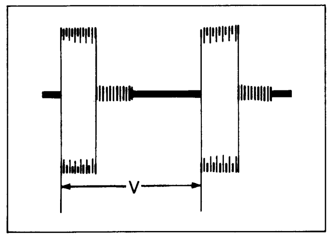
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

NOTE: THE WAVEFORM OF THIS DIAGRAM IS MEASURED WITH AIM THE CAMERA AT THE COLOUR CHART.

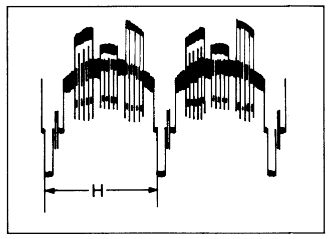
LUMINANCE & CHROMINANCE CIRCUIT TP (Test Point) WAVE FORM (REF No. 3000 Series)



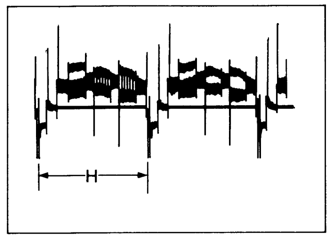
TP3001 PLAY
10mV/5msec. div. 0.2Vp-p



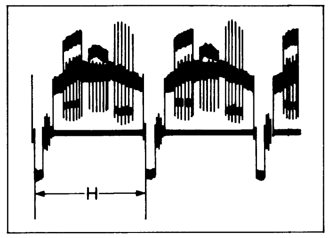
TP3003 REC
5mV/20msec. div. 0.2Vp-p



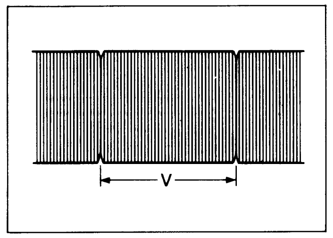
TP3002 REC
50mV/20µsec. div. 2Vp-p



TP3005 REC
20mV/20µsec. div. 0.8Vp-p

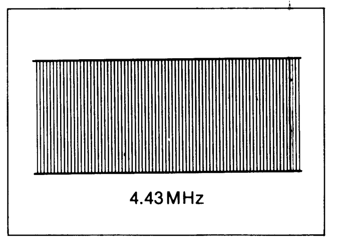


TP3002 PLAY
50mV/20µsec. div. 0.9Vp-p

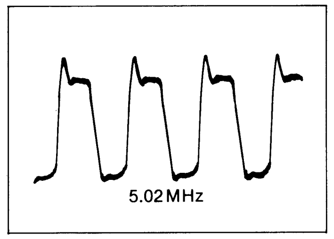


TP3007 REC
5mV/5msec. div. 180mVp-p

LUMINANCE & CHROMINANCE CIRCUIT TP (Test Point) WAVE FORM (REF No. 8000 Series)

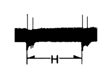
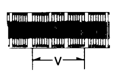
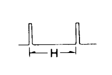
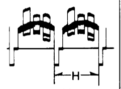
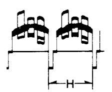
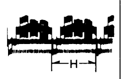
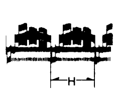
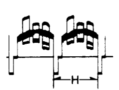
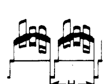
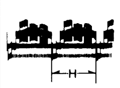
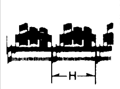
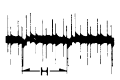
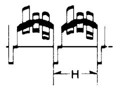
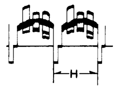
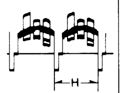
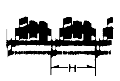
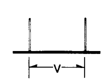
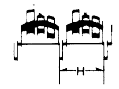
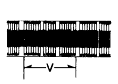
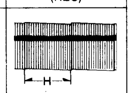
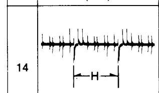
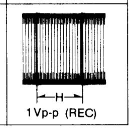


TP8001 REC/PLAY
20mV/10µsec. div. 0.5Vp-p

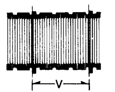
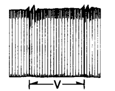
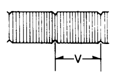
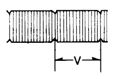
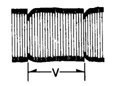
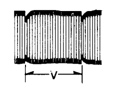
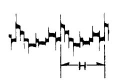
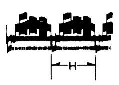
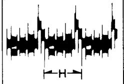


TP8003 REC/PLAY
20mV/1µsec. div. 0.7Vp-p

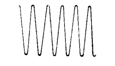
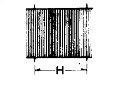
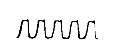
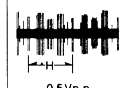
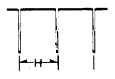
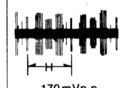
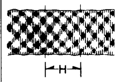
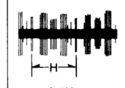
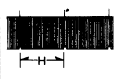
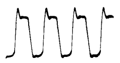
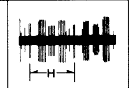
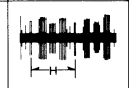
IC3001 (AN3215S)

PIN NO.	WAVEFORM	PIN NO.	WAVEFORM
1	 0.7Vp-p (REC/P.B)	14	 250mVp-p (P.B)
2	 5Vp-p (REC/P.B)	15	 350mVp-p (REC)
4	 0.9Vp-p (REC)	15	 0.35Vp-p (P.B)
6	 0.3Vp-p (P.B)	16	 1.8Vp-p (REC)
8	 0.65Vp-p (REC)	16	 1.5Vp-p (P.B)
8	 0.7Vp-p (P.B)	17	 220mVp-p (REC)
10	 2Vp-p (REC)	19	 1.4Vp-p (REC)
10	 2.2Vp-p (P.B)	19	 1.5Vp-p (P.B)
11	 5Vp-p (P.B)	22	 0.35Vp-p (REC)
13	 1.3Vp-p (P.B)	25	 0.62Vp-p (REC/P.B)
14	 0.5Vp-p (REC)	28	 1Vp-p (REC)

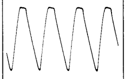
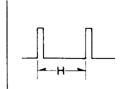
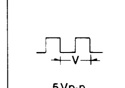
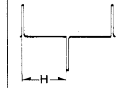
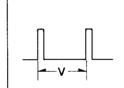
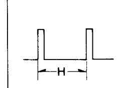
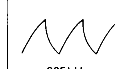
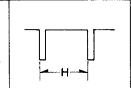
IC3002 (AN3321S)

PIN NO.	WAVEFORM
9	 1Vp-p (P.B)
12, 13	 0.2Vp-p (P.B)
16	 40mVp-p (P.B)
19	 250mVp-p (P.B)
20	 200mVp-p (P.B)
21	 25mVp-p (P.B)
25	 150mVp-p (P.B)
27, 29	 250mVp-p (P.B)
30	 550mVp-p (P.B)

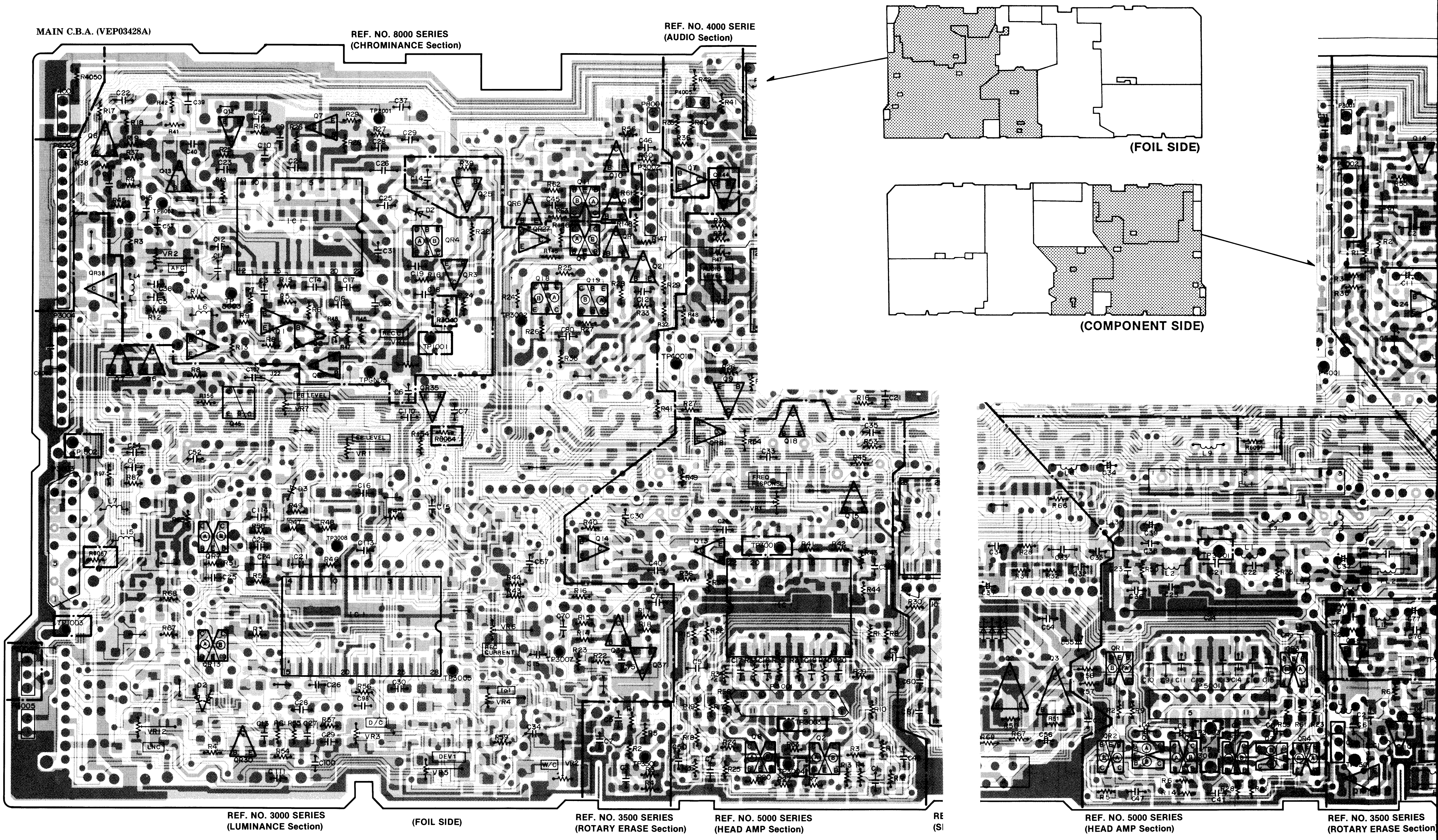
IC8001 (AN6367S)

PIN NO.	WAVEFORM	PIN NO.	WAVEFORM
4	 4.43MHz 0.52Vp-p (REC/P.B)	18	 120mVp-p (REC)
5	 4.43MHz 0.7Vp-p (REC/P.B)	20, 21	 0.5Vp-p (REC/P.B)
6	 2Vp-p (REC/P.B)	22	 170mVp-p (REC)
7	 1Vp-p (REC/P.B)	22	 0.4Vp-p (P.B)
9	 0.7Vp-p (REC/P.B)		
11	 5.02MHz 0.7Vp-p (REC/P.B)		
14	 0.7Vp-p (REC) 0.62Vp-p (P.B)		
16	 1.2Vp-p (P.B)		

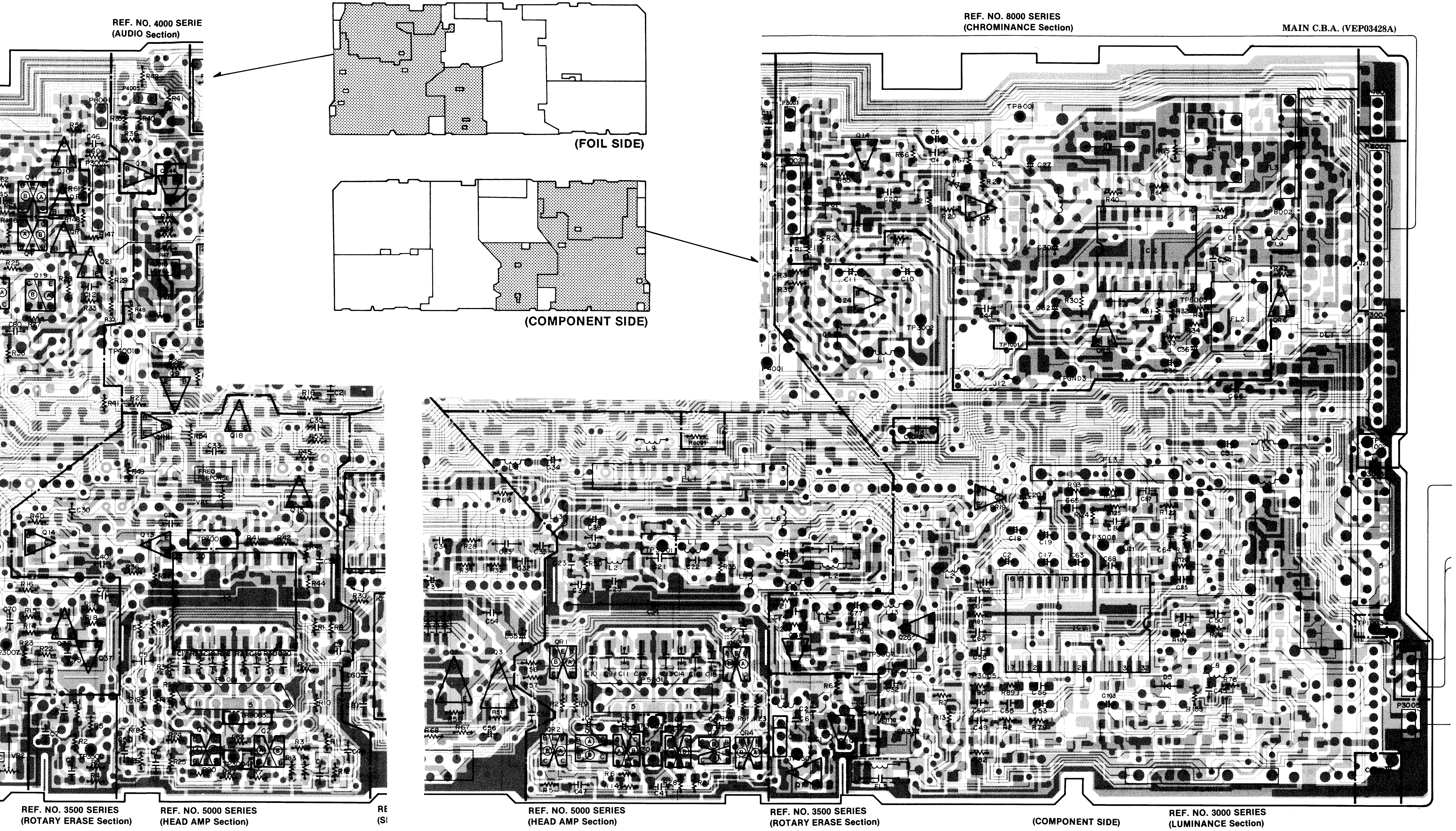
IC8002 (MN6163AS)

PIN NO.	WAVEFORM
2	 0.4MHz
4	 5Vp-p (REC)
6	 5Vp-p (REC/P.B)
10	 5Vp-p (P.B)
13	 5Vp-p (REC/P.B)
14	 5Vp-p (REC/P.B)
16	 625kHz 4Vp-p (REC)
18	 5Vp-p (REC/P.B)

3-20. LUMINANCE, CHROMINANCE & HEAD AMP Section In Main C.B.A. (VEP03482A)


MAIN C.B.A. (VEP03428A)
REF. NO. 8000 SERIES
(CHROMINANCE Section)
REF. NO. 4000 SERIE
(AUDIO Section)
(FOIL SIDE)
(COMPONENT SIDE)
IC1
TP1001
TP3001
TP3002
TP3005
TP4001
TP5001
AFC
REC C
PB LEVEL
CB LEVEL
FREQ RESPONSE
REC CURRENT
LNC
DEV1
D/C
W/C
REF. NO. 3000 SERIES
(LUMINANCE Section)
(FOIL SIDE)
REF. NO. 3500 SERIES
(ROTARY ERASE Section)
REF. NO. 5000 SERIES
(HEAD AMP Section)
RE
(S
REF. NO. 5000 SERIES
(HEAD AMP Section)
REF. NO. 3500 SERIES
(ROTARY ERASE Section)

Main C.B.A. (VEP03482A)


(FOIL SIDE)

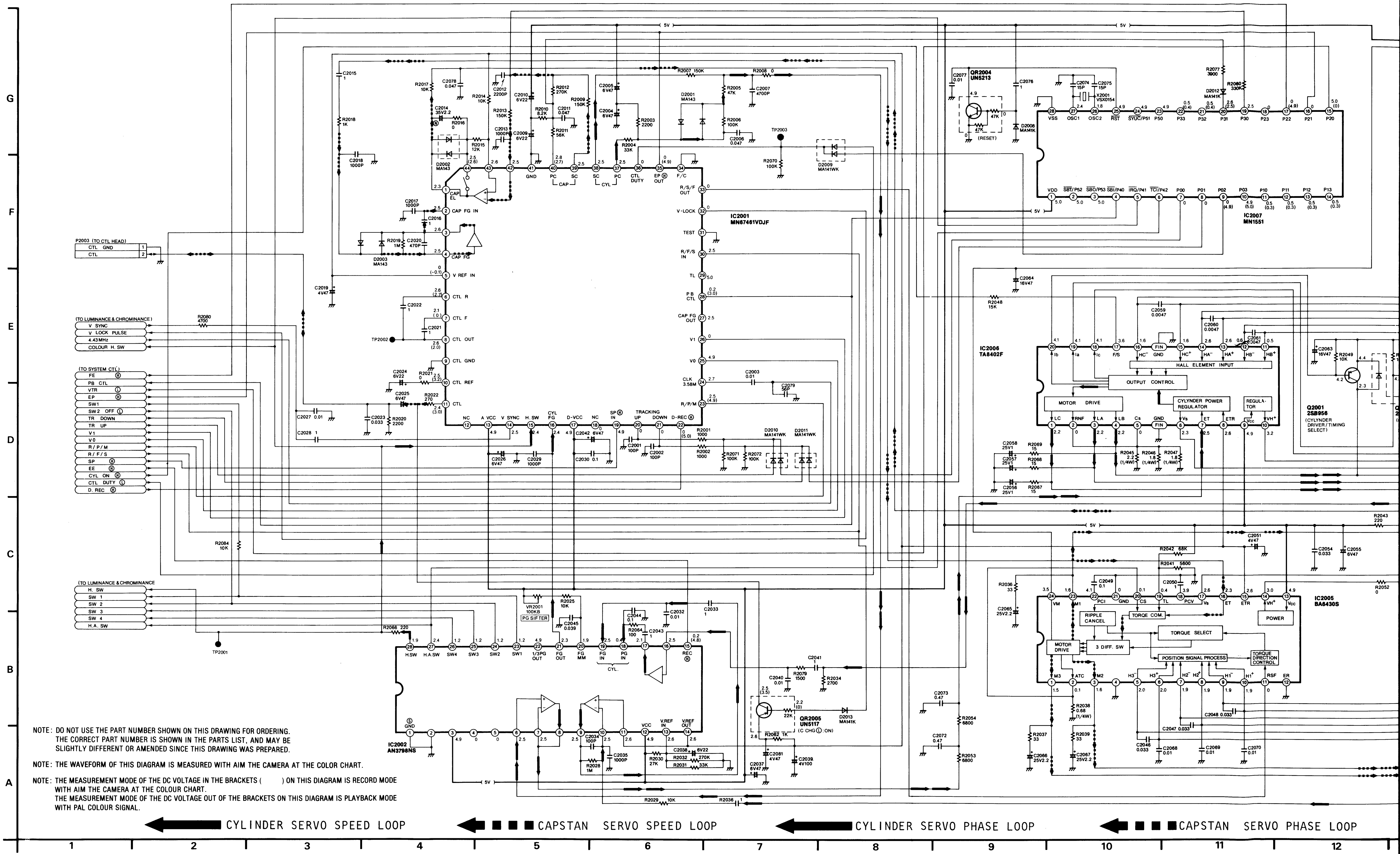
(COMPONENT SIDE)

REF. NO. 4000 SERIE
(AUDIO Section)
TP4001
FREQ RESPONSE
REF. NO. 3500 SERIES
(ROTARY ERASE Section)
REF. NO. 5000 SERIES
(HEAD AMP Section)

REF. NO. 8000 SERIES
(CHROMINANCE Section)
MAIN C.B.A. (VEP03428A)
TP8001
P8002
TP8003
TP3002
TP3001
TP3005
TP3003
P3004
P3005
REF. NO. 5000 SERIES
(HEAD AMP Section)
REF. NO. 3500 SERIES
(ROTARY ERASE Section)
(COMPONENT SIDE)
REF. NO. 3000 SERIES
(LUMINANCE Section)

Next Page:
SERVO Section

3-21. SERVO SCHEMATIC DIAGRAM


IC2001 MN67461VDJF
IC2002 AN3798NS
IC2005 BA6430S
IC2006 TA8402F
IC2007 MN1551
QR2004 UN5213
QR2005 UN5117 (C CHG Ⓛ : ON)
Q2001 2SB956 (CYLINDER DRIVER/TIMING SELECT)
P2003 (TO CTL HEAD)
CTL GND
CTL
(TO LUMINANCE & CHROMINANCE)
V SYNC
V LOCK PULSE
4.43 MHz
COLOUR H. SW
(TO SYSTEM CTL)
FE
PB CTL
VTR
EP
SW1
SW2 OFF
TR DOWN
TR UP
V1
V0
R/P/M
R/F/S
SP
EE
CYL ON
CTL DUTY
D. REC
(TO LUMINANCE & CHROMINANCE
H. SW
SW 1
SW 2
SW 3
SW 4
H.A. SW
TP2001
TP2002
TP2003
5V
CAP FG IN
CAP FG
V REF IN
CTL R
CTL F
CTL OUT
CTL GND
CTL REF
CTL
R/S/F OUT
V-LOCK
TEST
R/F/S IN
TL
PB CTL
CAP FG OUT
V1
V0
CLK 3.58M
R/P/M
A VCC
V SYNC
H. SW
CYL FG
D-VCC
SP IN
TRACKING UP DOWN
D-REC
GND
PC
SC
CAP
CYL
CTL DUTY
EP OUT
F/C
H.SW
H.A.SW
SW4
SW3
SW2
SW1
1/3PG OUT
FG OUT
FG MM
FG IN
PG IN
REC
GND
VCC
V.REF IN
V.REF OUT
VR2001 100KB
PG SIFTER
(RESET)
VSS
OSC1
OSC2
RST
SYUC/P51
P50
P33
P32
P31
P30
P23
P22
P21
P20
VDD
P00
P01
P02
P03
P10
P11
P12
P13
X2001 VSX0154
HALL ELEMENT INPUT
OUTPUT CONTROL
MOTOR DRIVE
CYLINDER POWER REGULATOR
REGULATOR
RIPPLE CANCEL
TORQE COM.
TORQUE SELECT
MOTOR DRIVE
3 DIFF. SW
POSITION SIGNAL PROCESS
TORQUE DIRECTION CONTROL
POWER
A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
10
11
12

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

NOTE: THE WAVEFORM OF THIS DIAGRAM IS MEASURED WITH AIM THE CAMERA AT THE COLOR CHART.

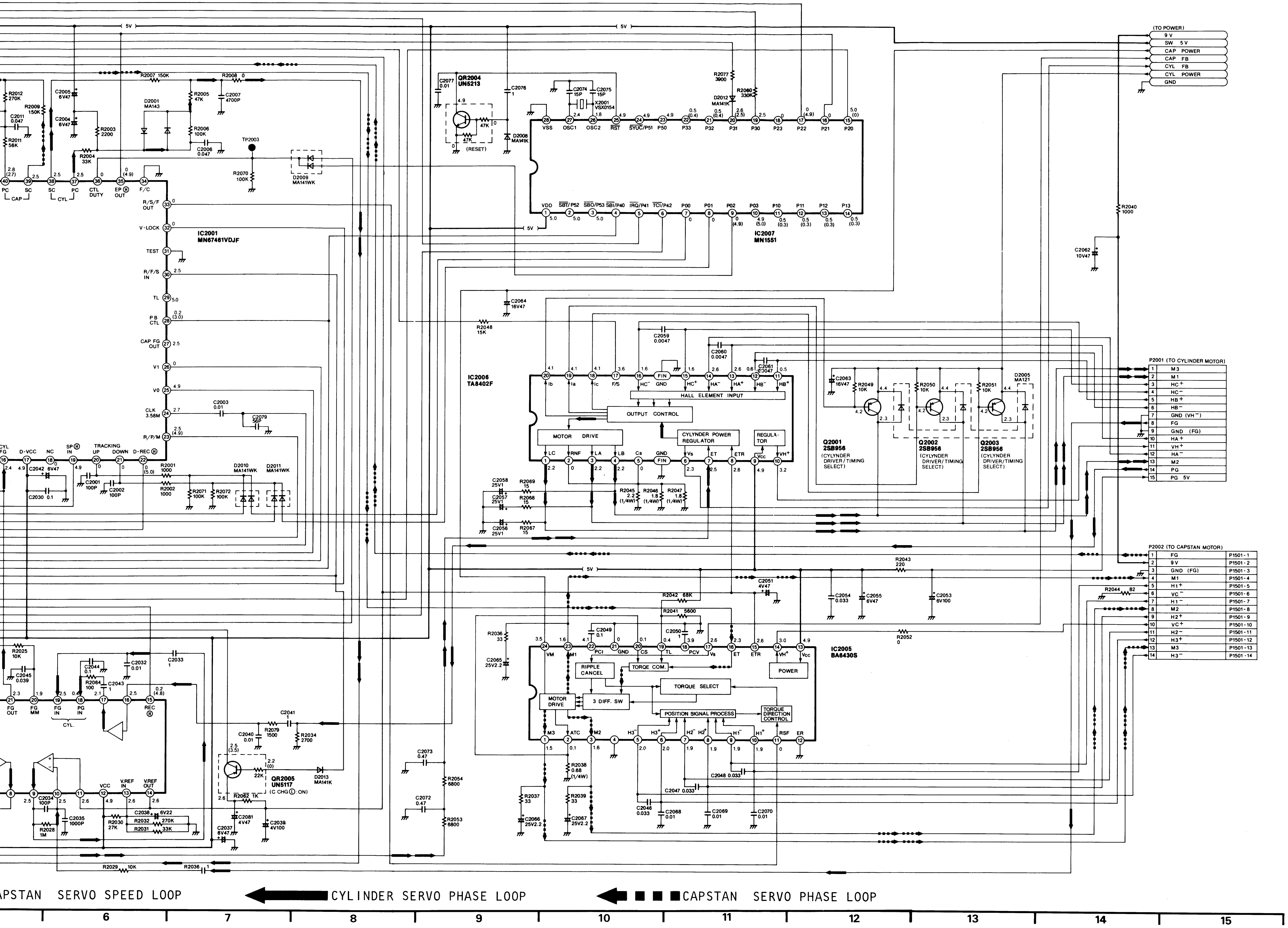
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART. THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

CYLINDER SERVO SPEED LOOP

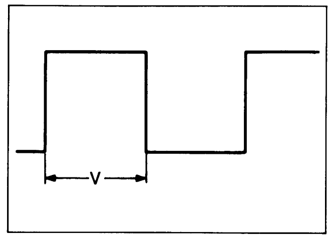
CAPSTAN SERVO SPEED LOOP

CYLINDER SERVO PHASE LOOP

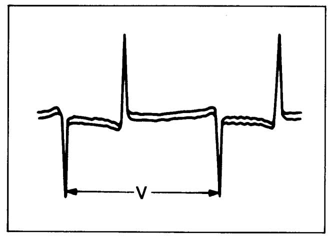
CAPSTAN SERVO PHASE LOOP


IC2001 MN67461VDJF
IC2007 MN1551
IC2006 TA8402F
IC2005 BA6430S
QR2004 UN5213
QR2005 UN5117 (C CHG Ⓛ: ON)
Q2001 2SB956 (CYLINDER DRIVER/TIMING SELECT)
Q2002 2SB956 (CYLINDER DRIVER/TIMING SELECT)
Q2003 2SB956 (CYLINDER DRIVER/TIMING SELECT)
TP2003
(RESET)
HALL ELEMENT INPUT
OUTPUT CONTROL
MOTOR DRIVE
CYLYNDER POWER REGULATOR
REGULA-TOR
RIPPLE CANCEL
TORQE COM.
TORQUE SELECT
3 DIFF. SW
POSITION SIGNAL PROCESS
TORQUE DIRECTION CONTROL
POWER
(TO POWER)
9 V
SW 5V
CAP POWER
CAP FB
CYL FB
CYL POWER
GND
P2001 (TO CYLINDER MOTOR)
1 M3
2 M1
3 HC+
4 HC−
5 HB+
6 HB−
7 GND (VH−)
8 FG
9 GND (FG)
10 HA+
11 VH+
12 HA−
13 M2
14 PG
15 PG 5V
P2002 (TO CAPSTAN MOTOR)
1 FG P1501-1
2 9V P1501-2
3 GND (FG) P1501-3
4 M1 P1501-4
5 H1+ P1501-5
6 VC− P1501-6
7 H1− P1501-7
8 M2 P1501-8
9 H2+ P1501-9
10 VC+ P1501-10
11 H2− P1501-11
12 H3+ P1501-12
13 M3 P1501-13
14 H3− P1501-14
APSTAN SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP
CAPSTAN SERVO PHASE LOOP
6
7
8
9
10
11
12
13
14
15

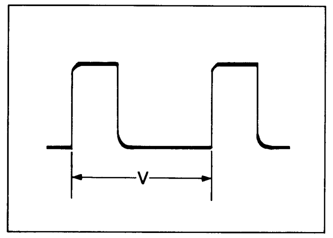
SERVO CIRCUIT TP (Test Point) WAVE FORM (REF No. 2000 Series)



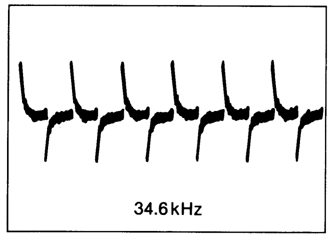
TP2001 REC/PLAY
2V/10msec. div. 4Vp-p



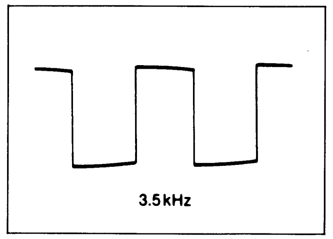
TP2002 PLAY
1V/10msec. div. 3.8Vp-p



TP2002 REC
2V/10msec. div. 5Vp-p



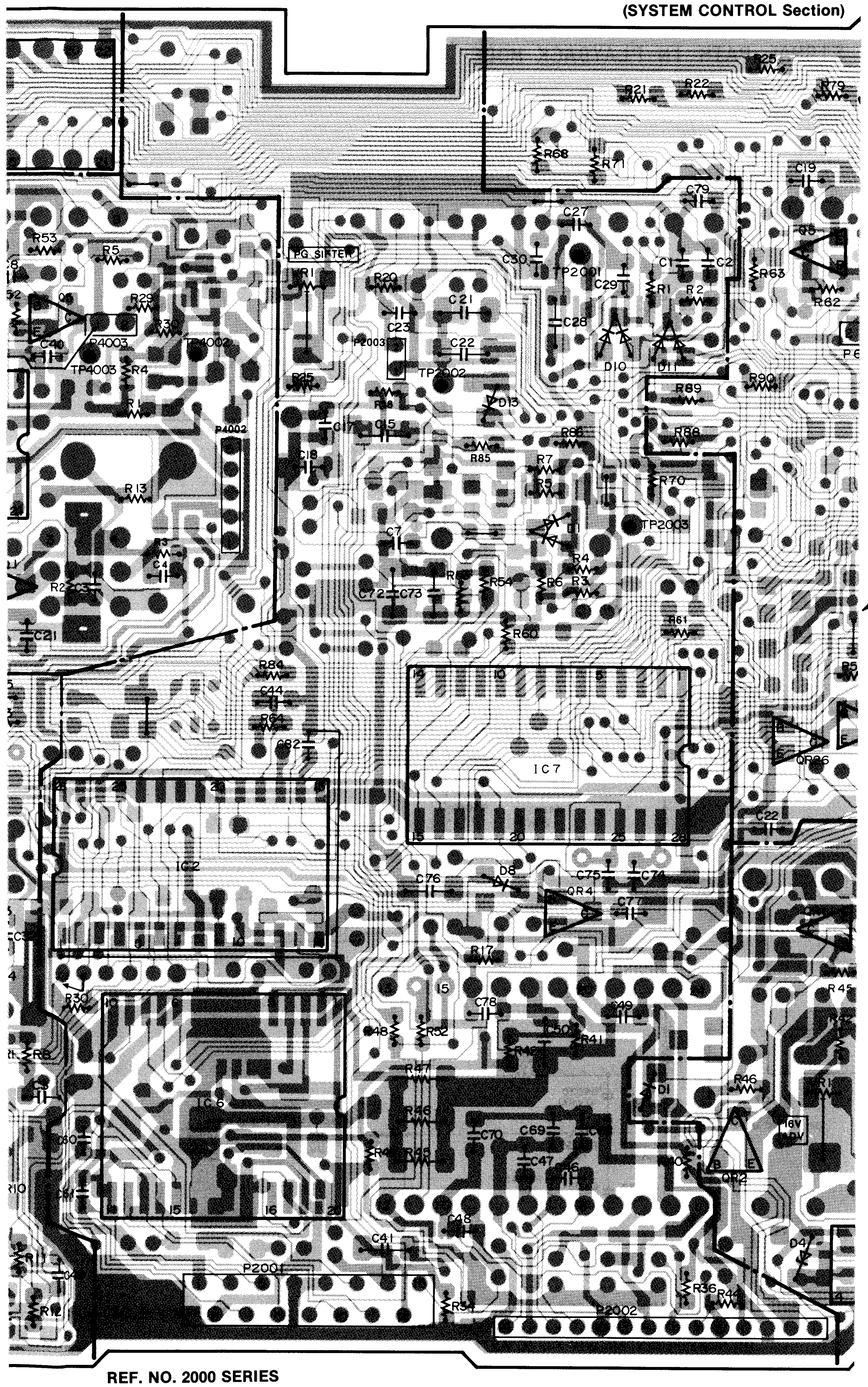
TP2003 PLAY
5mV/20μsec. div. 150mVp-p



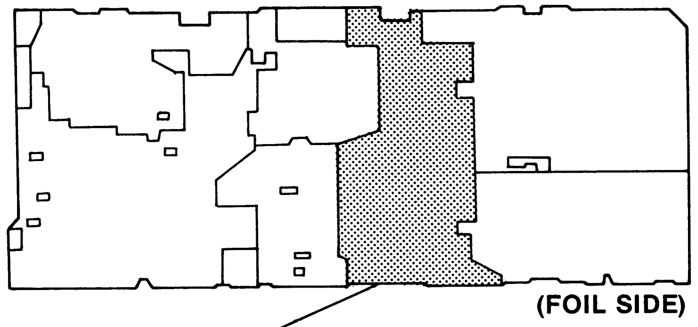
TP2003 REC
2V/20msec. div. 5Vp-p

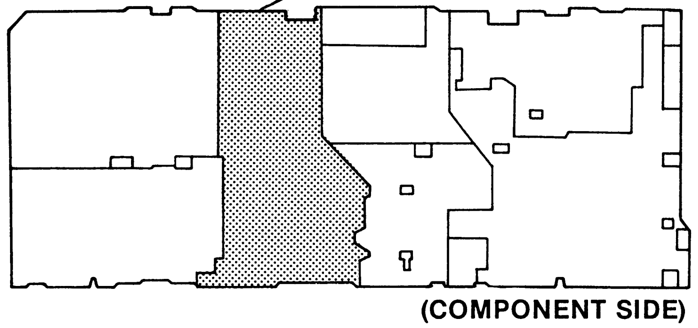
3-22. SERVO Section In Main C.B.A. (VEP03482A)

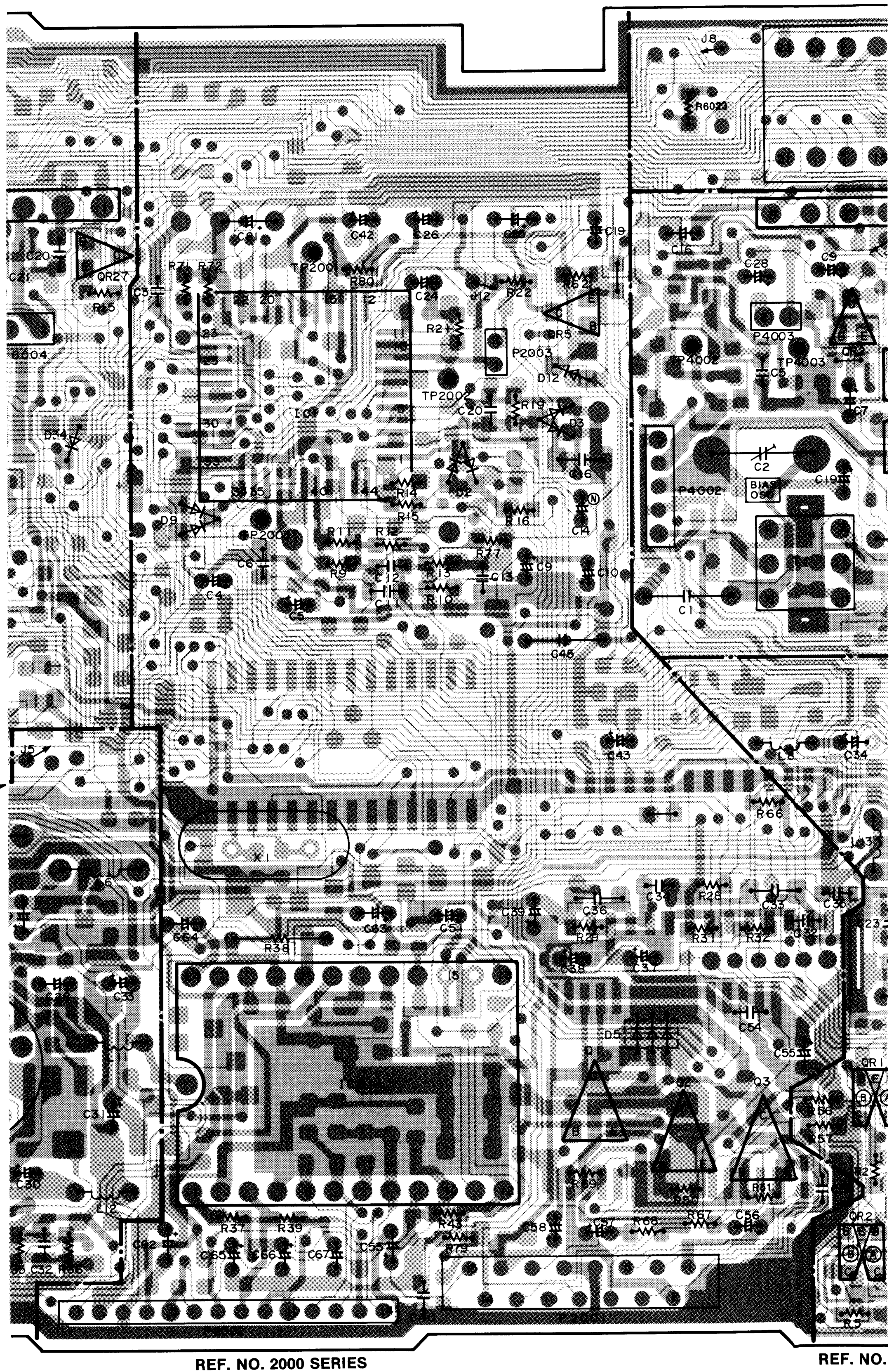
REF. NO. 6000 SERIES
(SYSTEM CONTROL Section)


PG SHIFTER
TP2001
TP2002
TP2003
TP4002
TP4003
P4002
P4003
IC7
IC2
IC6
P2001
P2002
QR4
QR6
QR2
D10
D11
D13
D8
D1
D4

REF. NO. 2000 SERIES
(SERVO Section)


(FOIL SIDE)

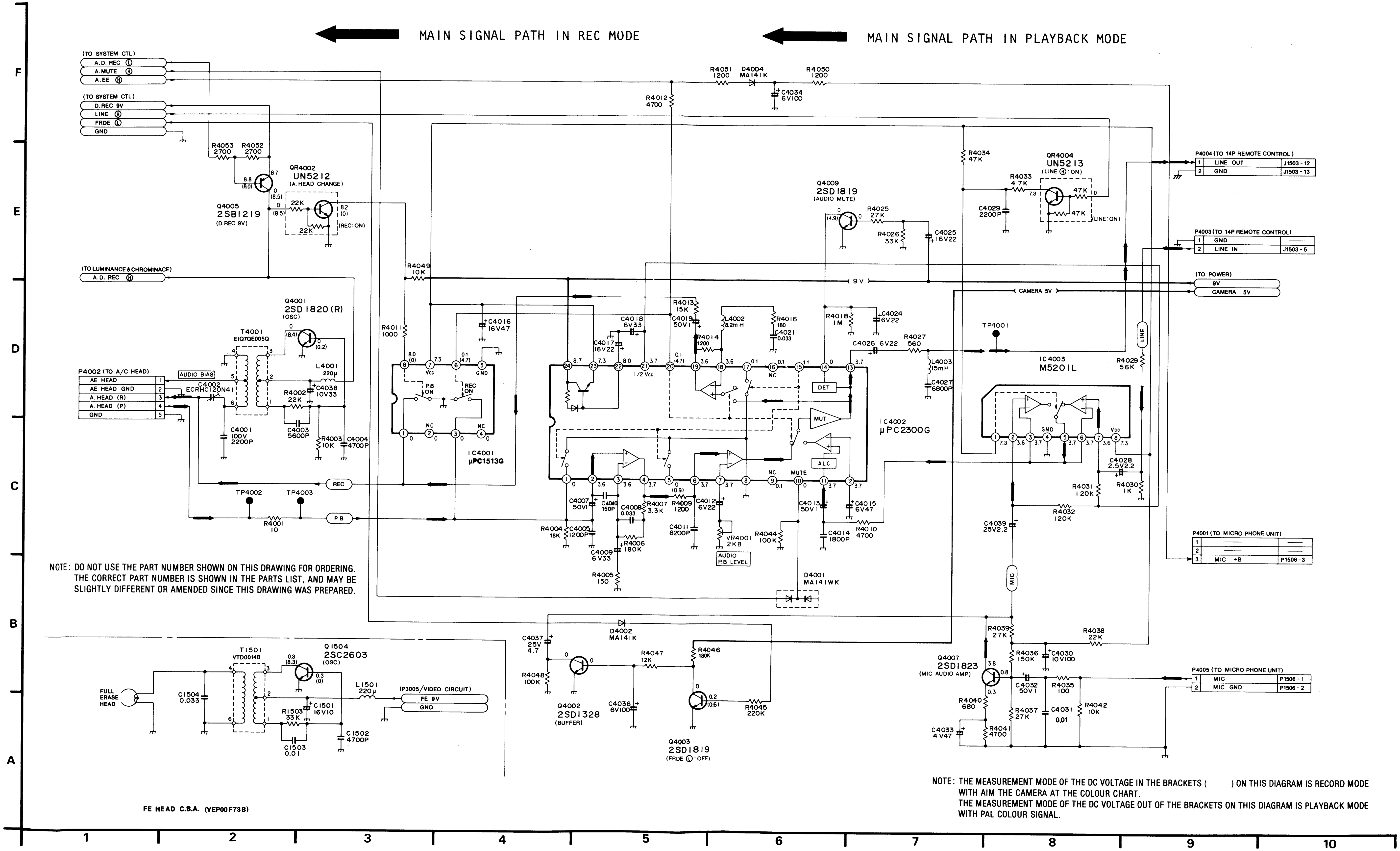

(COMPONENT SIDE)


J8
R6023
QR27
TP2001
TP2002
P2003
P2001
P4002
P4003
TP4002
TP4003
BIAS OSC
X1
IC1
I5
D5
QR1
QR2

REF. NO. 2000 SERIES
(SERVO Section)

REF. NO.
(HEAD A

3-23. AUDIO SCHEMATIC DIAGRAM


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
(TO SYSTEM CTL)
A.D. REC Ⓛ
A.MUTE Ⓗ
A.EE Ⓗ
(TO SYSTEM CTL)
D.REC 9V
LINE Ⓗ
FRDE Ⓛ
GND
R4053 2700
R4052 2700
QR4002 UN5212 (A.HEAD CHANGE)
Q4005 2SB1219 (D.REC 9V)
22K
22K
(REC:ON)
(TO LUMINANCE & CHROMINACE)
A.D. REC Ⓗ
Q4001 2SD1820(R) (OSC)
T4001 EIQ7QE005Q
L4001 220µ
AUDIO BIAS
C4002 ECRHC120N41
R4002 22K
C4038 10V33
C4001 100V 2200P
C4003 5600P
R4003 10K
C4004 4700P
P4002 (TO A/C HEAD)
AE HEAD
AE HEAD GND
A. HEAD (R)
A. HEAD (P)
GND
REC
P.B
TP4002
TP4003
R4001 10
R4049 10K
R4011 1000
C4016 16V47
Vcc
GND
PB ON
REC ON
NC
IC4001 µPC1513G
R4012 4700
R4051 1200
D4004 MA141K
R4050 1200
C4034 6V100
C4018 6V33
C4017 16V22
C4019 50V1
R4013 15K
R4014 1200
L4002 8.2m H
R4016 180
C4021 0.033
1/2 Vcc
R4018 1M
C4024 6V22
C4026 6V22
R4027 560
L4003 15mH
C4027 6800P
DET
MUT
ALC
MUTE
IC4002 µPC2300G
9V
CAMERA 5V
C4007 50V1
C4010 150P
C4008 0.033
R4007 3.3K
R4009 1200
C4012 6V22
C4011 8200P
VR4001 2KB
AUDIO P.B LEVEL
R4044 100K
C4013 50V1
C4015 6V47
R4010 4700
C4014 1800P
R4004 18K
C4005 1200P
R4006 180K
C4009 6V33
R4005 150
D4001 MA141WK
Q4009 2SD1819 (AUDIO MUTE)
R4025 27K
R4026 33K
C4025 16V22
R4034 47K
QR4004 UN5213 (LINE Ⓗ:ON)
R4033 4.7K
C4029 2200P
47K
47K
(LINE:ON)
P4004 (TO 14P REMOTE CONTROL)
LINE OUT
GND
J1503-12
J1503-13
P4003 (TO 14P REMOTE CONTROL)
GND
LINE IN
J1503-5
(TO POWER)
9V
CAMERA 5V
TP4001
IC4003 M5201L
R4029 56K
LINE
C4028 2.5V2.2
R4031 120K
R4030 1K
R4032 120K
C4039 25V2.2
P4001 (TO MICRO PHONE UNIT)
MIC +B
P1506-3
MIC
D4002 MA141K
C4037 25V 4.7
R4048 100K
Q4002 2SD1328 (BUFFER)
R4047 12K
R4046 180K
C4036 6V100
R4045 220K
Q4003 2SD1819 (FRDE Ⓛ:OFF)
R4039 27K
R4038 22K
R4036 150K
C4030 10V100
Q4007 2SD1823 (MIC AUDIO AMP)
C4032 50V1
R4035 100
R4040 680
R4037 27K
C4031 0.01
R4042 10K
C4033 4V47
R4041 4700
P4005 (TO MICRO PHONE UNIT)
MIC
MIC GND
P1506-1
P1506-2
T1501 VTD0014B
Q1504 2SC2603 (OSC)
FULL ERASE HEAD
C1504 0.033
L1501 220µ
R1503 33K
C1501 16V10
C1502 4700P
C1503 0.01
(P3005/VIDEO CIRCUIT)
FE 9V
GND
FE HEAD C.B.A. (VEP00F73B)

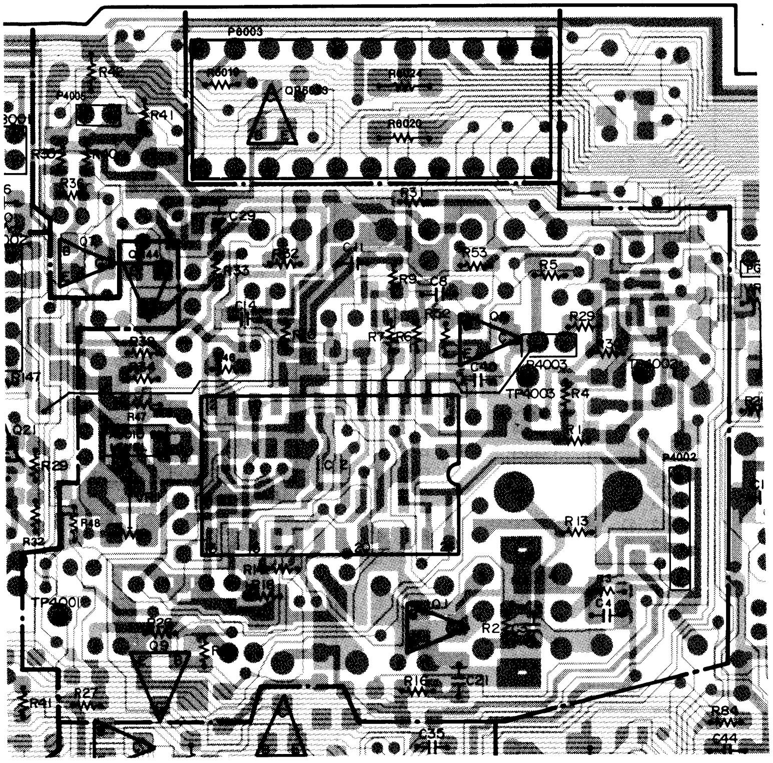
NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

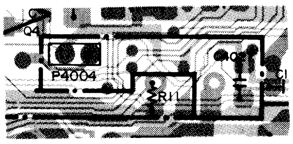
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

Back Page:
SERVO Section

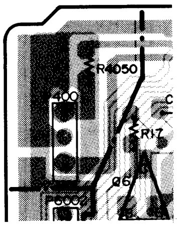
3-24. AUDIO Section In Main C.B.A. (VEP03482A)

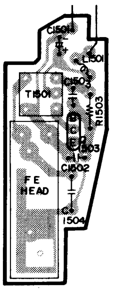
REF. NO. 4000 SERIES
(AUDIO Section)


P6003
R6019
QR6003
R6024
R6020
R42
P4005
R41
R36
R31
C29
R33
R32
R53
R5
R9
C8
C14
R7
R6
R29
R4003
TP4003
R4
P4002
R147
Q21
R29
R48
R32
IC1
R13
TP4001
R28
Q9
R22
R16
C21
R41
R27
C35
R84
C44

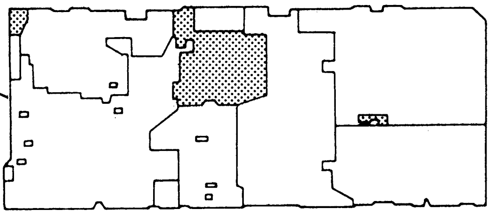

Q4
P4004
R11

MAIN C.B.A. (VEP(

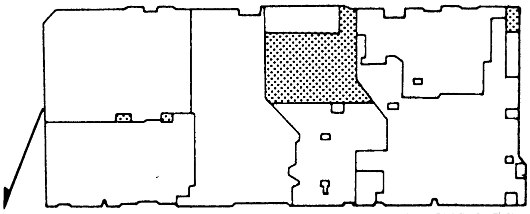



T1501
FE HEAD
R1503
C1502
C1504

F.E HEAD C.B.A.
(VEP00F73B)



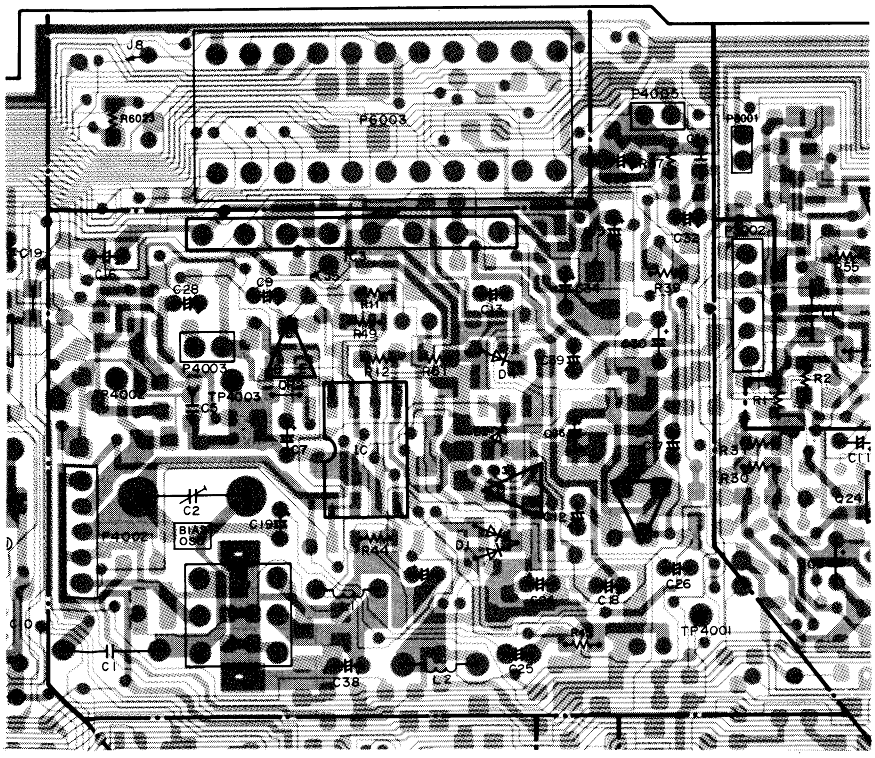
(FOIL SIDE)



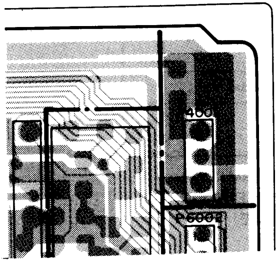
(COMPONENT SIDE)

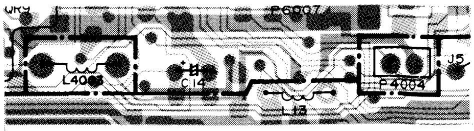
C002

REF. NO. 4000 SERIES
(AUDIO Section)


J8
R6023
P6003
P4005
P6001
R17
C19
C16
C28
C9
R35
R11
R49
C13
C32
R39
P4002
R55
P4003
TP4003
R12
R51
C5
C7
IC1
C19
R2
R1
R37
R30
C11
Q24
C2
C19
BIAS OSC
P4002
R44
D1
C18
C26
TP4001
C1
C38
L2
C25

MAIN C.B.A. (VEP03428A)




P6007
L4003
C14
L13
P4004
J5

MAIN C.B.A. ADDRESS INFORMATION

LUMINANCE, CHROMINANCE & HEAD AMP Section

Transistor		
Q3001	E-5	Ⓕ
Q3002	E-5	Ⓕ
Q3006	D-2	Ⓕ
Q3007	D-2	Ⓕ
Q3018	E-5	Ⓕ
Q3019	E-5	Ⓕ
Q3024	D-23	Ⓒ
Q3025	E-4	Ⓕ
Q3026	B-23	Ⓒ
Q3036	B-5	Ⓕ
Q3037	B-5	Ⓕ
Q3038	B-23	Ⓒ
Q3045	D-3	Ⓕ
Q5001	A-21	Ⓒ
Q5002	A-7	Ⓕ
Q5003	A-21	Ⓒ
Q5007	A-22	Ⓒ
Q5008	A-6	Ⓕ
Q5009	A-22	Ⓒ
Q5013	C-6	Ⓕ
Q5014	C-5	Ⓕ
Q5015	C-7	Ⓕ
Q5018	C-6	Ⓕ
Q8001	D-3	Ⓕ
Q8002	D-3	Ⓕ
Q8004	D-2	Ⓕ
Q8005	E-24	Ⓒ
Q8006	F-2	Ⓕ
Q8007	F-3	Ⓕ
Q8010	E-5	Ⓕ
Q8011	E-5	Ⓕ
Q8012	F-2	Ⓕ
Q8013	E-2	Ⓕ
Q8014	F-23	Ⓒ
Transistor & Resistor		
QR3001	E-5	Ⓕ
QR3006	D-26	Ⓒ
QR3007	C-2	Ⓕ
QR3013	B-2	Ⓕ
QR3019	C-24	Ⓒ
QR3027	E-5	Ⓕ
QR3030	A-3	Ⓕ
QR3035	D-4	Ⓕ
QR3038	E-2	Ⓕ
QR3044	E-6	Ⓕ
QR5001	B-21	Ⓒ
QR5002	A-21	Ⓒ
QR5003	B-22	Ⓒ
QR5004	A-22	Ⓒ
QR5008	C-6	Ⓕ
QR8001	E-5	Ⓕ
QR8003	E-4	Ⓕ
QR8004	E-4	Ⓕ
QR8005	D-25	Ⓒ
QR8007	D-3	Ⓕ
Integrated Circuit		
IC3001	B-3	Ⓕ
IC3002	C-25	Ⓒ
IC5001	B-6	Ⓕ
IC8001	E-3	Ⓕ
IC8002	E-25	Ⓕ
Test Point		
TP3001	C-22	Ⓒ
TP3001	C-6	Ⓕ
TP3002	D-23	Ⓒ
TP3002	D-4	Ⓕ
TP3003	A-22	Ⓒ
TP3003	A-6	Ⓕ
TP3004	A-22	Ⓒ
TP3004	A-6	Ⓕ
TP3005	B-24	Ⓒ
TP3005	B-4	Ⓕ
TP3007	B-23	Ⓒ
TP3007	B-5	Ⓕ
TP3008	C-25	Ⓒ
TP3008	C-3	Ⓕ
TP8001	F-24	Ⓒ
TP8001	F-4	Ⓕ
TP8002	E-26	Ⓒ
TP8002	E-2	Ⓕ
TP8003	D-25	Ⓒ
TP8003	D-2	Ⓕ
TP GND 3	D-25	Ⓒ
TP GND 3	D-3	Ⓕ
Adjustment		
VR3001	C-3	Ⓕ
VR3002	A-5	Ⓕ
VR3003	A-3	Ⓕ
VR3004	B-4	Ⓕ
VR3005	A-4	Ⓕ
VR3007	D-3	Ⓕ
VR3008	B-4	Ⓕ
VR3012	A-2	Ⓕ
VR5001	C-6	Ⓕ
VR8001	D-4	Ⓕ
VR8002	E-2	Ⓕ
Connector		
P3002	E-23	Ⓒ
P3002	E-5	Ⓕ
P3003	C-27	Ⓒ
P3003	C-1	Ⓕ
P3004	D-27	Ⓒ
P3004	D-1	Ⓕ
P3005	B-27	Ⓒ
P3005	B-1	Ⓕ
P5001	B-22	Ⓒ
P5001	B-6	Ⓕ
P8001	F-24	Ⓒ
P8001	F-5	Ⓕ

ADDRESS INFORMATION
Ⓒ ··· COMPONENT SIDE
Ⓕ ··· FOIL SIDE

SYSTEM CONTROL Section

Transistor		
Q1501	G-14	
Q1502	C-27	
Q1503	G-13	
Q3501	A-23	Ⓒ
Q3502	A-23	Ⓒ
Q3503	A-23	Ⓒ
Q6001	D-12	Ⓕ
Q6002	C-13	Ⓕ
Q6003	F-13	Ⓕ
Q6004	C-10	Ⓕ
Q6005	E-10	Ⓕ
Transistor & Resistor		
QR6003	D-12	Ⓕ
QR6004	D-12	Ⓕ
QR6009	C-16	Ⓒ
QR6010	F-15	Ⓒ
QR6011	C-14	Ⓒ
QR6012	D-13	Ⓕ
QR6013	D-13	Ⓕ
QR6014	F-13	Ⓕ
QR6015	E-15	Ⓒ
QR6016	D-13	Ⓕ
QR6017	F-12	Ⓕ
QR6018	F-15	Ⓒ
QR6019	C-12	Ⓕ
QR6023	F-12	Ⓕ
QR6024	F-12	Ⓕ
QR6025	C-12	Ⓕ
QR6026	C-10	Ⓕ
QR6027	E-18	Ⓒ
QR6028	F-15	Ⓒ
QR6033	F-6	Ⓕ
QR6035	F-11	Ⓕ
QR6036	F-10	Ⓕ
QR6037	F-11	Ⓕ
Integrated Circuit		
IC6001	D-16	Ⓒ
IC6002	D-15	Ⓒ
IC6003	E-13	Ⓕ
IC6004	F-17	Ⓒ
IC6005	F-13	Ⓕ
Test Point		
TP3501	A-1	Ⓕ
Adjustment		
VR6001	E-11	Ⓕ
VR6002	E-13	Ⓕ
Connector		
P001	G-19	
P002	G-19	
P003	G-19	
P1503	G-12	
P1504	G-12	
P1507	G-17	
P6002	E-27	Ⓒ
P6002	E-1	Ⓕ
P6003	F-21	Ⓒ
P6003	F-7	Ⓕ
P6004	E-18	Ⓒ
P6004	E-10	Ⓕ
P6005	C-15	Ⓒ
P6005	C-13	Ⓕ
P6006	B-27	Ⓒ
P6006	B-1	Ⓕ
P6007	D-17	Ⓒ
P6007	D-11	Ⓕ
P6009	C-15	Ⓒ
P6009	C-13	Ⓕ
P6010	D-15	Ⓒ
P6010	D-13	Ⓕ
P6011	E-14	Ⓒ
P6011	F-14	Ⓕ
P6012	C-16	Ⓒ
P6012	C-12	Ⓕ
P6013	E-15	Ⓒ
P6013	E-13	Ⓕ

ADDRESS INFORMATION
Ⓒ ··· COMPONENT SIDE
Ⓕ ··· FOIL SIDE

SERVO Section

Transistor		
Q2001	B-20	Ⓒ
Q2002	B-20	Ⓒ
Q2003	B-21	Ⓒ
Transistor & Resistor		
QR2004	C-9	Ⓕ
QR2005	E-20	Ⓒ
Integrated Circuit		
IC2001	E-19	Ⓒ
IC2002	C-8	Ⓕ
IC2005	B-19	Ⓒ
IC2006	B-8	Ⓕ
IC2007	C-9	Ⓕ
Test Point		
TP2001	E-19	Ⓒ
TP2001	E-9	Ⓕ
TP2002	E-19	Ⓒ
TP2002	E-9	Ⓕ
TP2003	D-19	Ⓒ
TP2003	D-9	Ⓕ
Adjustment		
VR2001	E-8	Ⓕ
Connector		
P2001	A-20	Ⓒ
P2001	A-8	Ⓕ
P2002	A-18	Ⓒ
P2002	A-9	Ⓕ
P2003	E-20	Ⓒ
P2003	E-8	Ⓕ

ADDRESS INFORMATION
Ⓒ ··· COMPONENT SIDE
Ⓕ ··· FOIL SIDE

AUDIO Section

Transistor		
Q1503	B-27	
Q4001	D-7	Ⓕ
Q4002	D-22	Ⓒ
Q4003	D-22	Ⓒ
Q4005	E-7	Ⓕ
Q4007	E-6	Ⓕ
Q4009	D-6	Ⓕ
Transistor & Resistor		
QR4002	E-21	Ⓒ
Integrated Circuit		
IC4001	E-21	Ⓒ
IC4002	E-7	Ⓕ
IC4003	E-21	Ⓒ
Test Point		
TP4001	D-6	Ⓕ
TP4001	D-22	Ⓒ
TP4002	E-8	Ⓕ
TP4002	D-20	Ⓒ
TP4003	E-7	Ⓕ
TP4003	E-21	Ⓒ
Adjustment		
VR4001	D-6	Ⓕ
C4002	D-21	Ⓒ
Connector		
P4001	F-1	Ⓕ
P4001	F-27	Ⓒ
P4002	E-8	Ⓕ
P4002	E-20	Ⓒ
P4003	E-7	Ⓕ
P4003	E-21	Ⓒ
P4004	C-11	Ⓕ
P4004	D-17	Ⓒ
P4005	F-6	Ⓕ
P4005	F-22	Ⓒ

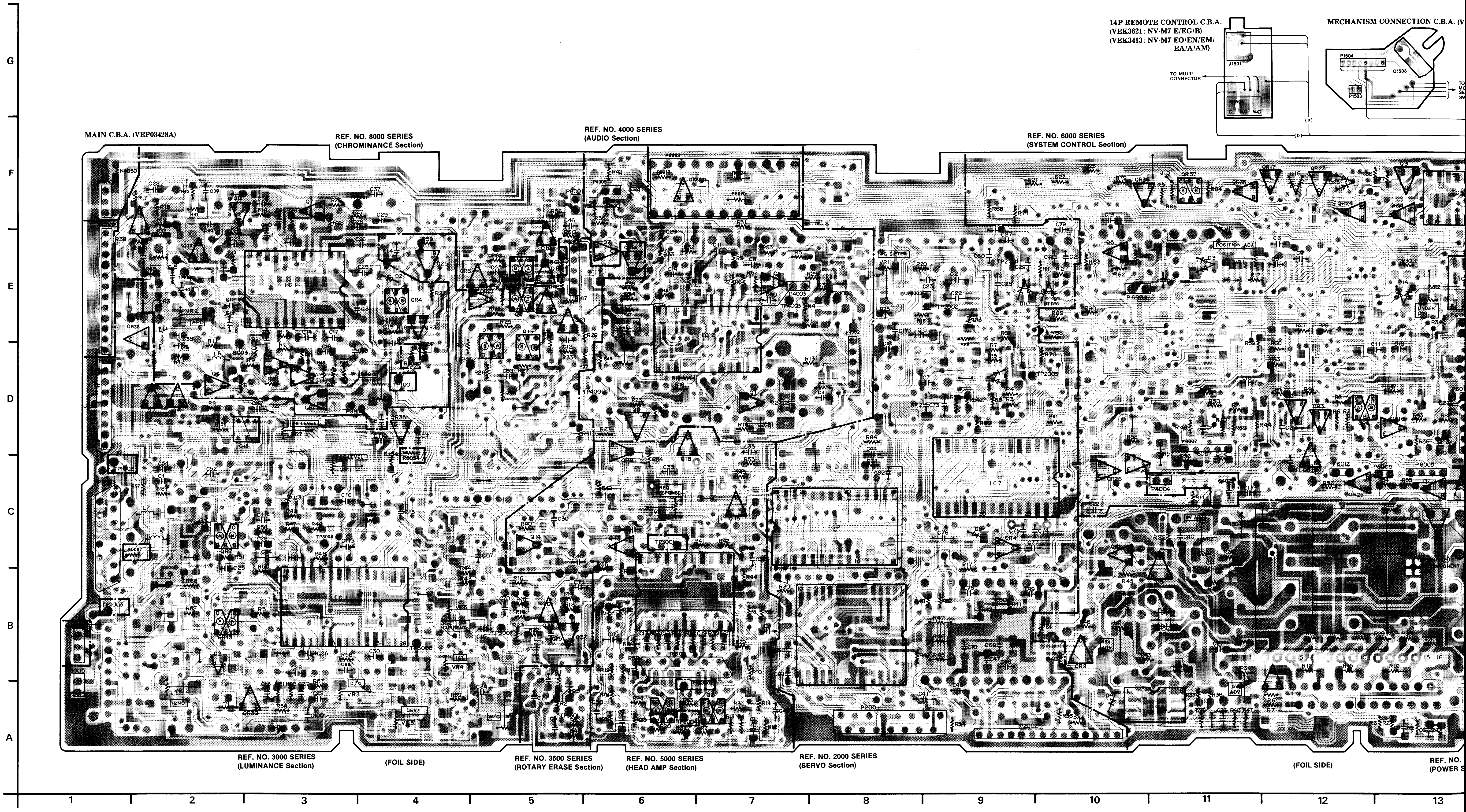
ADDRESS INFORMATION
Ⓒ ··· COMPONENT SIDE
Ⓕ ··· FOIL SIDE

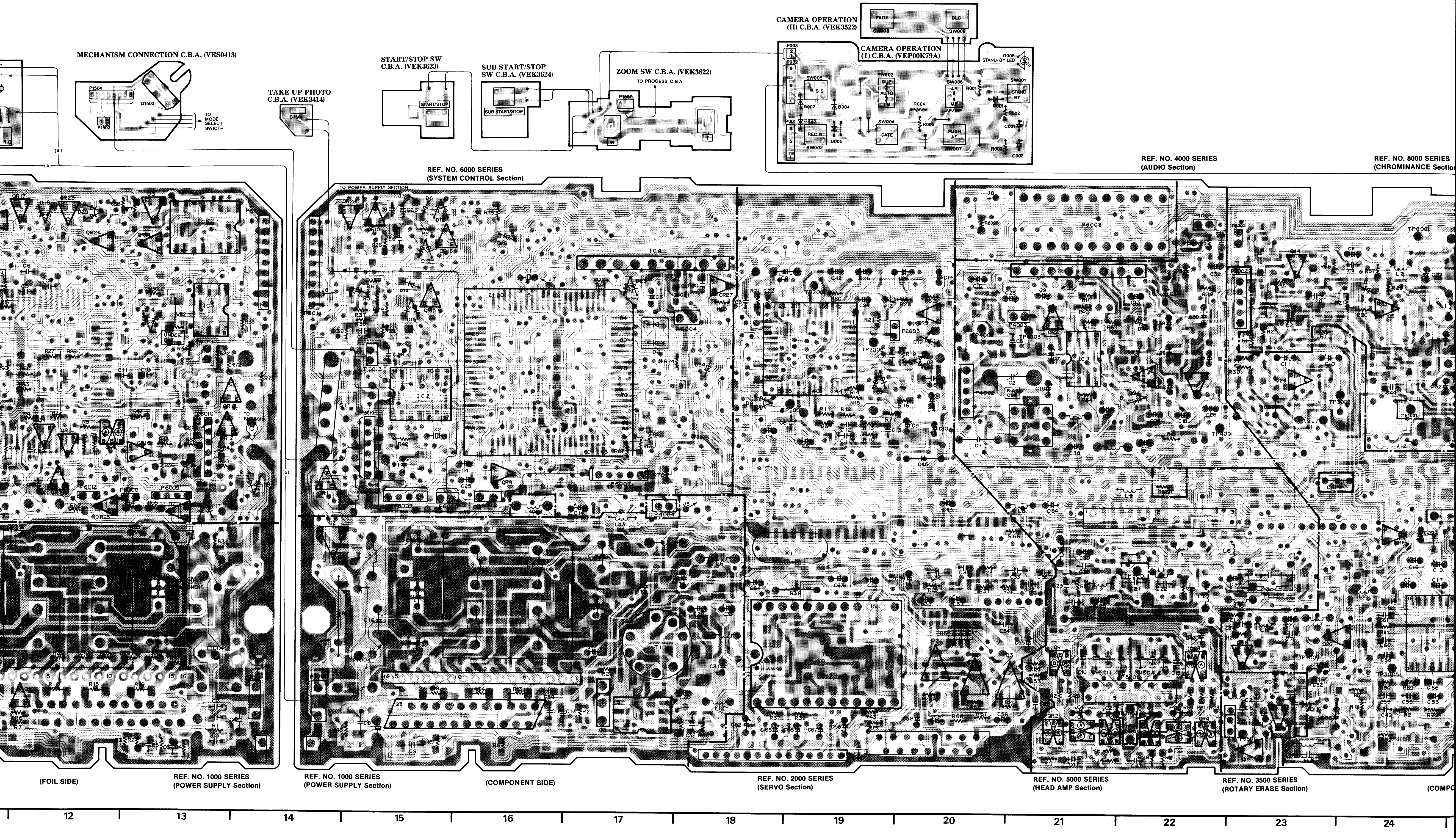
POWER SUPPLY Section

Transistor		
Q1001	B-12	Ⓕ
Q1002	C-14	Ⓒ
Q1003	A-17	Ⓒ
Q1004	C-13	Ⓕ
Q1005	B-11	Ⓕ
Transistor & Resistor		
QR1001	C-10	Ⓕ
QR1002	B-10	Ⓕ
Integrated Circuit		
IC1001	A-16	Ⓒ
IC1002	B-16	Ⓒ
IC1003	A-17	Ⓒ
IC1004	A-11	Ⓕ
Test Point		
TP1001	D-24	Ⓒ
TP1001	D-4	Ⓕ
TP1002	C-27	Ⓒ
TP1002	C-1	Ⓕ
TP1003	B-27	Ⓒ
TP1003	B-1	Ⓕ
TP1004	B-15	Ⓒ
TP1004	B-13	Ⓕ
Adjustment		
VR1001	B-10	Ⓕ
VR1002	C-11	Ⓕ
VR1003	B-11	Ⓕ
Connector		
P1001	B-14	Ⓒ
P1001	B-14	Ⓕ
P1003	A-14	Ⓒ
P1003	B-14	Ⓕ

ADDRESS INFORMATION
Ⓒ ··· COMPONENT SIDE
Ⓕ ··· FOIL SIDE

3-25. MAIN C.B.A. (VEP03482A)


14P REMOTE CONTROL C.B.A.
(VEK3621: NV-M7 E/EG/B)
(VEK3413: NV-M7 EO/EN/EM/ EA/A/AM)
TO MULTI CONNECTOR
MECHANISM CONNECTION C.B.A. (V
MAIN C.B.A. (VEP03428A)
REF. NO. 8000 SERIES (CHROMINANCE Section)
REF. NO. 4000 SERIES (AUDIO Section)
REF. NO. 6000 SERIES (SYSTEM CONTROL Section)
REF. NO. 3000 SERIES (LUMINANCE Section)
(FOIL SIDE)
REF. NO. 3500 SERIES (ROTARY ERASE Section)
REF. NO. 5000 SERIES (HEAD AMP Section)
REF. NO. 2000 SERIES (SERVO Section)
(FOIL SIDE)
REF. NO.
(POWER S
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13


MECHANISM CONNECTION C.B.A. (VES0413)
TO MODE SELECT SWICTH
TAKE UP PHOTO C.B.A. (VEK3414)
START/STOP SW C.B.A. (VEK3623)
START/STOP
SUB START/STOP SW C.B.A. (VEK3624)
SUB START/STOP
ZOOM SW C.B.A. (VEK3622)
TO PROCESS C.B.A.
CAMERA OPERATION (II) C.B.A. (VEK3522)
FADE
BLC
SW008
SW009
CAMERA OPERATION (I) C.B.A. (VEP00K79A)
D006 STAND-BY LED
H.S.S
SW005
OUT AUTO IN
SW003
AF M.F AF/MF
SW006
STAND BY
SW001
REC.R
SW002
DATE
SW004
PUSH AF
SW007
REF. NO. 6000 SERIES (SYSTEM CONTROL Section)
TO POWER SUPPLY SECTION
REF. NO. 4000 SERIES (AUDIO Section)
REF. NO. 8000 SERIES (CHROMINANCE Section
(FOIL SIDE)
REF. NO. 1000 SERIES (POWER SUPPLY Section)
REF. NO. 1000 SERIES (POWER SUPPLY Section)
(COMPONENT SIDE)
REF. NO. 2000 SERIES (SERVO Section)
REF. NO. 5000 SERIES (HEAD AMP Section)
REF. NO. 3500 SERIES (ROTARY ERASE Section)
(COMPO
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13
14
15
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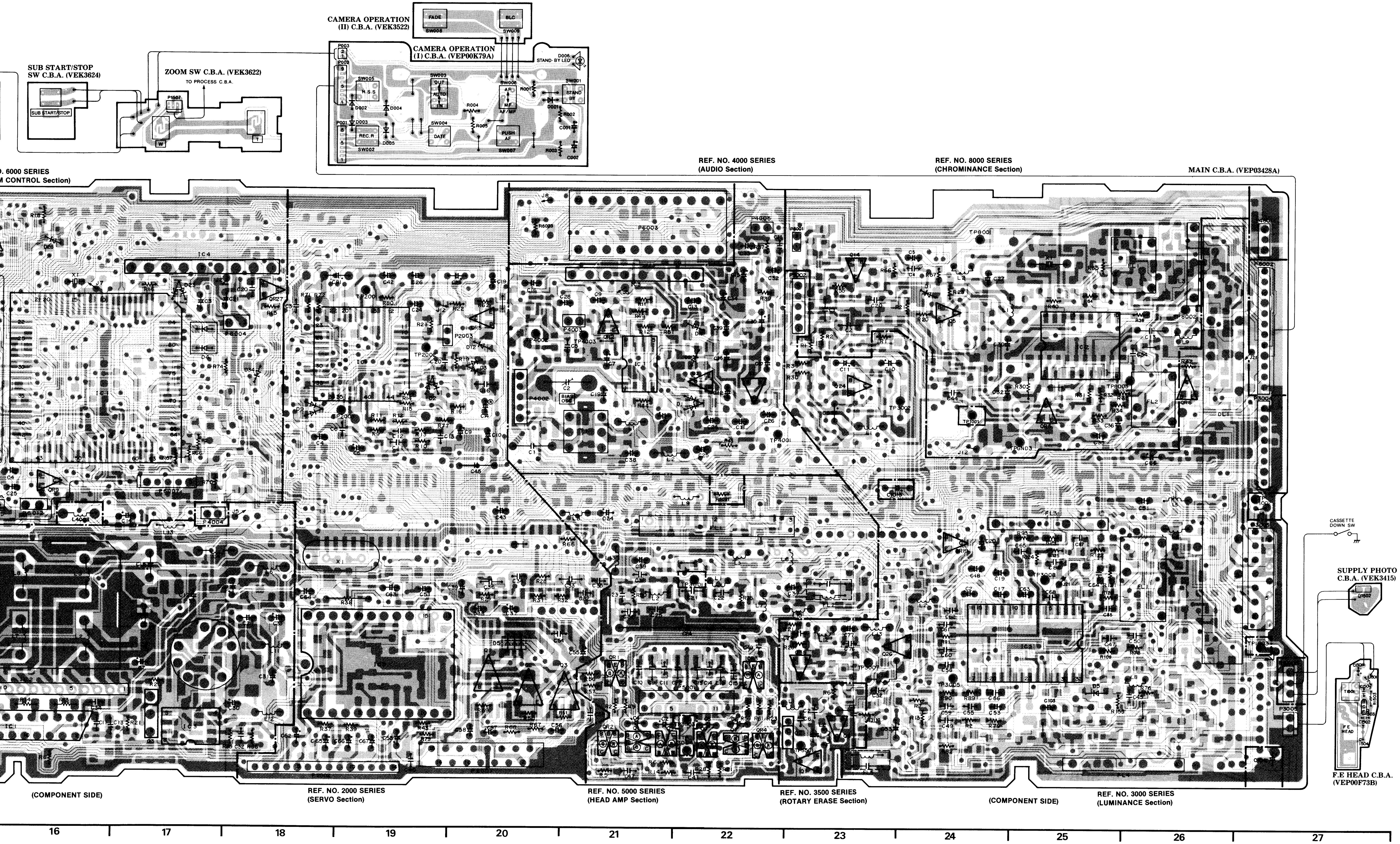
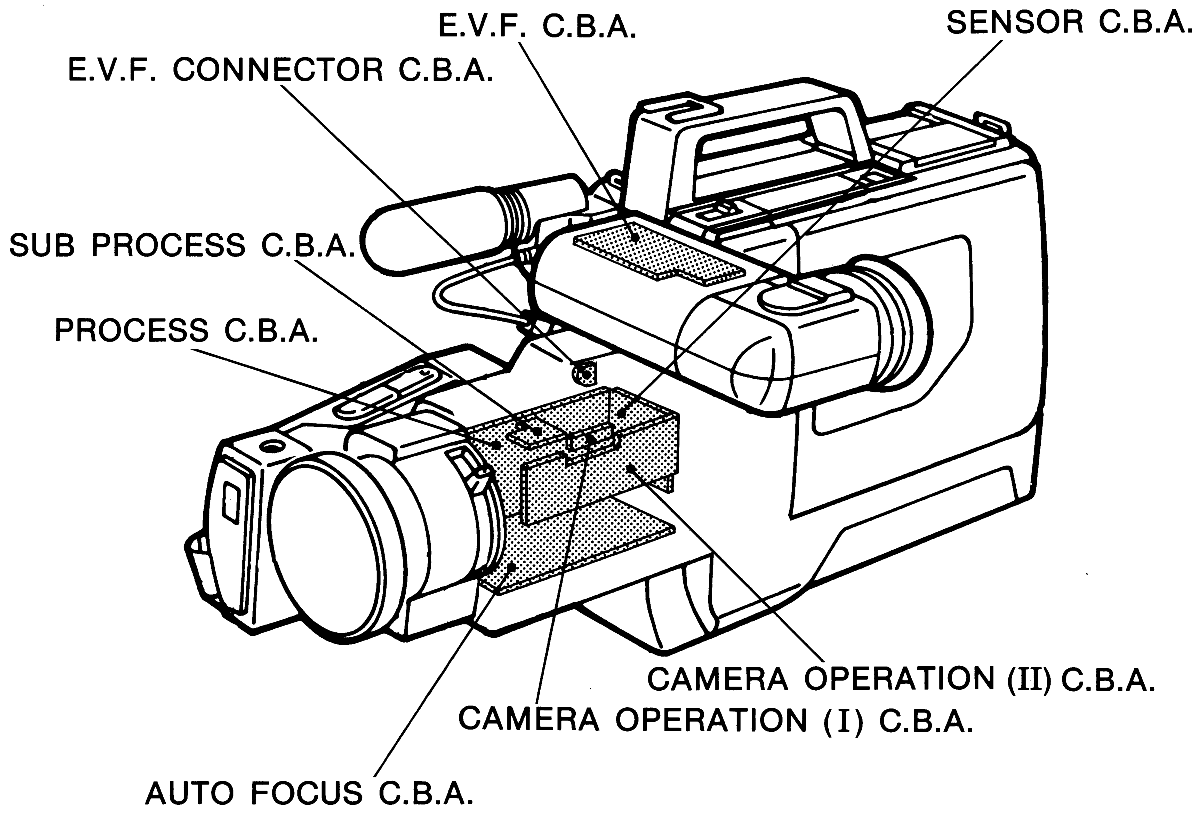
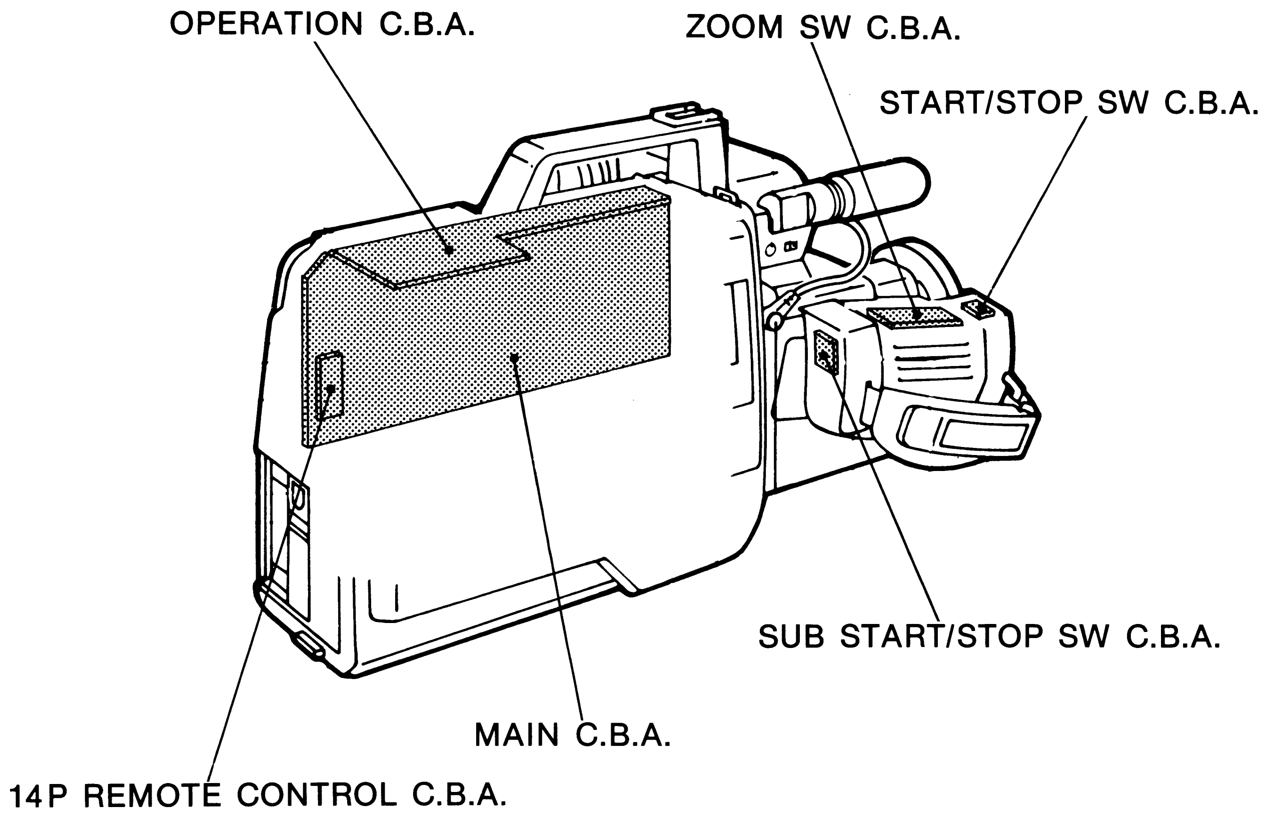

CAMERA OPERATION
(II) C.B.A. (VEK3522)
FADE
BLC
SW008
SW009
CAMERA OPERATION
(I) C.B.A. (VEP00K79A)
STAND-BY LED
SUB START/STOP
SW C.B.A. (VEK3624)
SUB START/STOP
ZOOM SW C.B.A. (VEK3622)
TO PROCESS C.B.A.
W
T
R.S.S
REC.R
OUT
AUTO
IN
DATE
AF
MF
AF/MF
PUSH AF
STAND BY
. 6000 SERIES
M CONTROL Section)
REF. NO. 4000 SERIES
(AUDIO Section)
REF. NO. 8000 SERIES
(CHROMINANCE Section)
MAIN C.B.A. (VEP03428A)
CASSETTE DOWN SW
SUPPLY PHOTO
C.B.A. (VEK3415)
F.E HEAD C.B.A.
(VEP00F73B)
F.E HEAD
(COMPONENT SIDE)
REF. NO. 2000 SERIES
(SERVO Section)
REF. NO. 5000 SERIES
(HEAD AMP Section)
REF. NO. 3500 SERIES
(ROTARY ERASE Section)
(COMPONENT SIDE)
REF. NO. 3000 SERIES
(LUMINANCE Section)
16
17
18
19
20
21
22
23
24
25
26
27

Next Page:
C.B. LAYOUT, ICs & TRANSISTOR
INFORMATION Section

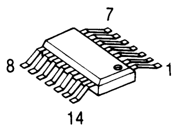
3-26. CIRCUIT BOARD LAYOUT


E.V.F. C.B.A.
SENSOR C.B.A.
E.V.F. CONNECTOR C.B.A.
SUB PROCESS C.B.A.
PROCESS C.B.A.
CAMERA OPERATION (II) C.B.A.
CAMERA OPERATION (I) C.B.A.
AUTO FOCUS C.B.A.


OPERATION C.B.A.
ZOOM SW C.B.A.
START/STOP SW C.B.A.
SUB START/STOP SW C.B.A.
MAIN C.B.A.
14P REMOTE CONTROL C.B.A.

3-27. ICs & TRANSISTORs INFORMATION

GENERAL CIRCUIT Section



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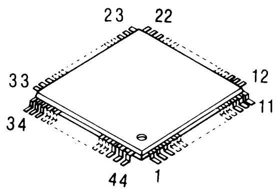
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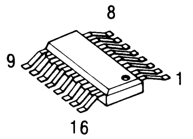
MN67461VDJF



AN2010S
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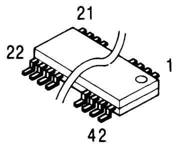
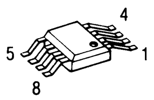
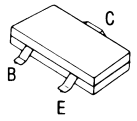


AN2583S
AN2153S



AN1358S
µPC358G2
µPC1513G
AN6914S
MJM4588MP
AN6562S
NJM3415M



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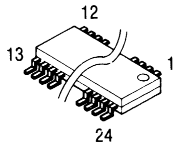
2SA1255	2SC3930
2SA1532	2SC3931
2SA1610	2SC3938
2SB709	2SC4176
2SB710	2SD968A
2SB779	2SD1328
2SB956	2SD1819
2SB970	2SD1820
2SB1218	2SD1823
2SB1219	
2SB1220	



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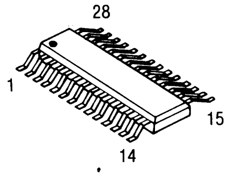

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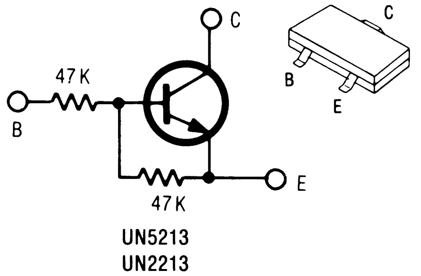
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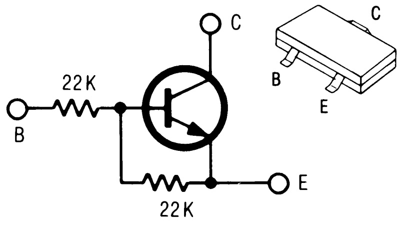
47K
B
E
47K
C
B
E

UN5213
UN2213
GA1L4M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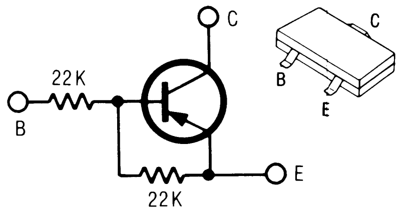
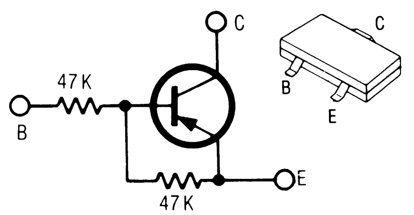
22K
B
E
22K
C
B
E

UN5212
GA1F4M


C
22K
B
E
22K
C
B
E

UN5112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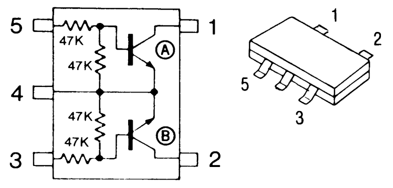
B
E
47K
C
B
E

UN5113
GN1L4M
UN2113


5
4
3
47K
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47K
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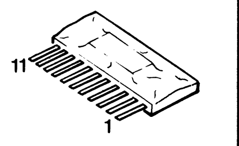
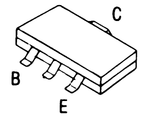
Ⓐ
Ⓑ
1
2
1
2
5
3

XN1213

PROCESS, PROCESS S

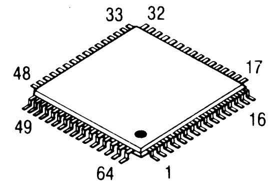


VCR0200



2SD874

AUTO FOCUS Section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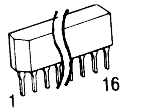
64
1

MN15865VYC

POWER SUPPLY Secti



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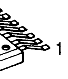

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4BG
2BS

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C3931
C3938
C4176
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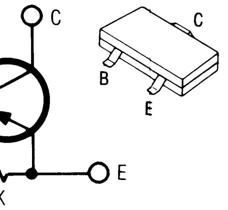
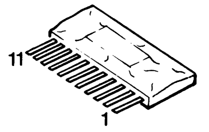
D1328
D1819
D1820
D1823



12

PROCESS, PROCESS SUB, ENCODER Section



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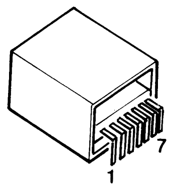

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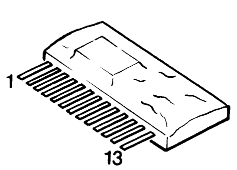

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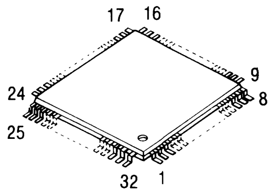
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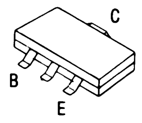
AN2253FA



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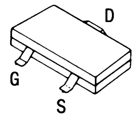

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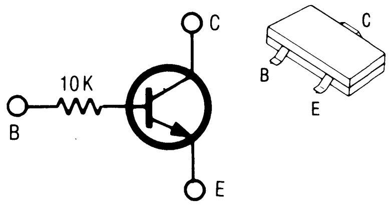
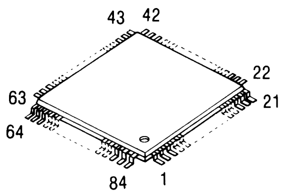


UN5215

SYSTEM CONTROL Section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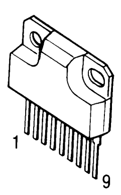
84 1

MN15361VYF



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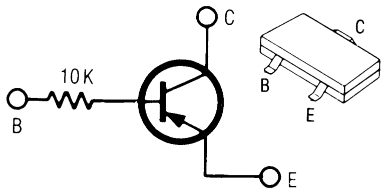

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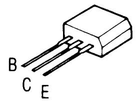

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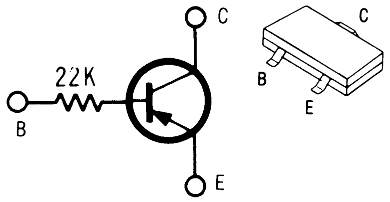
SERVO Section



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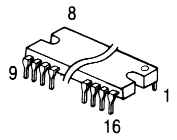

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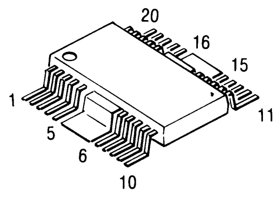
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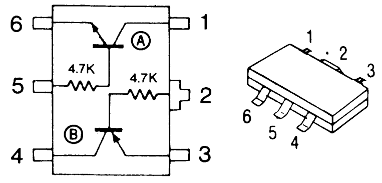
TA8402F


6
1
Ⓐ
5
4.7K
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2
Ⓑ
4
3
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6
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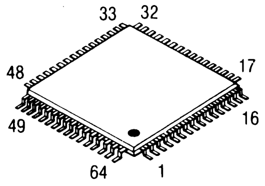
4

XN4316

AUTO FOCUS Section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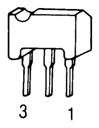
MN15865VYC



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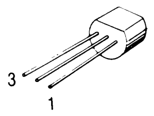
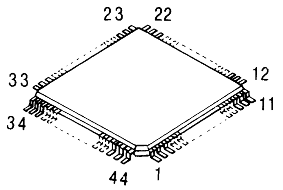


AN78N05

SENSOR, CDS Section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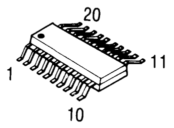
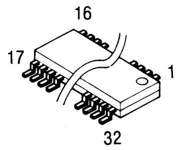


μPD6147G

LUMINANCE & CHROMINANCE Section



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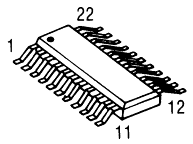

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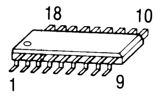

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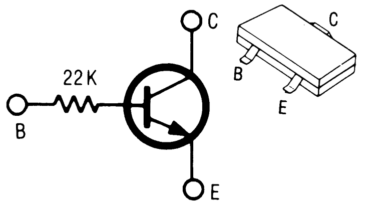

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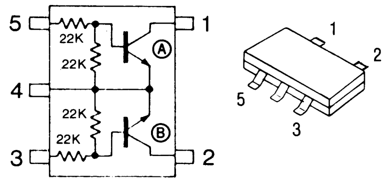
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Ⓑ
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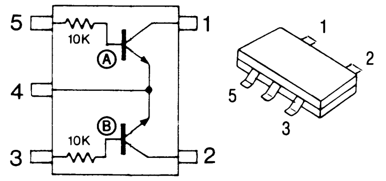
4
3

XN1212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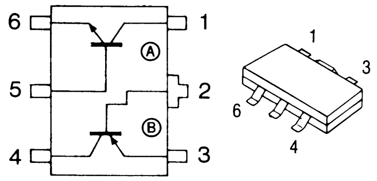
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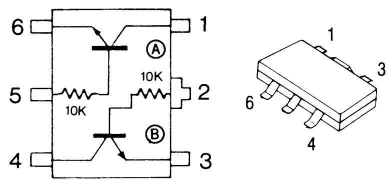
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10K
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Ⓑ
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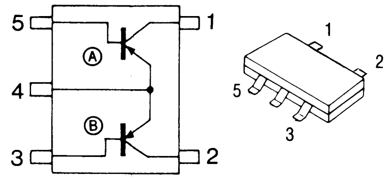
1
3
6
5
4

XN4201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Ⓐ
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Ⓑ
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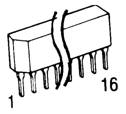
3

XN1401

POWER SUPPLY Section



UN102
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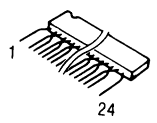
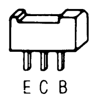
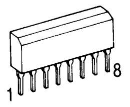


BA6149LS



2SD1293M

AUDIO Section



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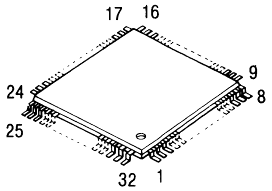
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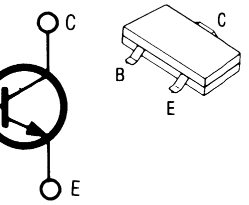
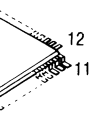
1

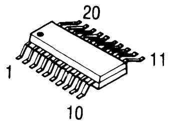
AN2253FA



UN5215

S Section

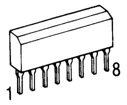




μPD6147G

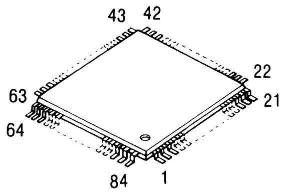
BM

Section

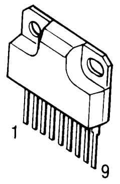


M5201L

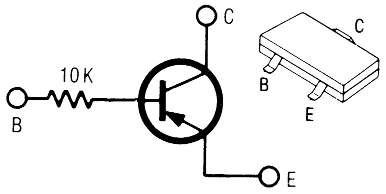
SYSTEM CONTROL Section


43
42
22
21
63
64
84
1

MN15361VYF



M54543L



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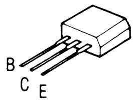
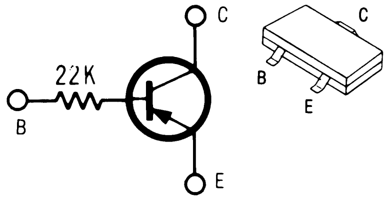
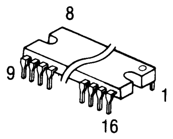


2SA1175

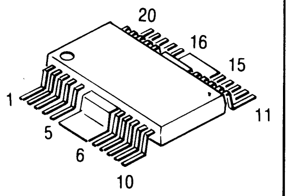
SERVO Section



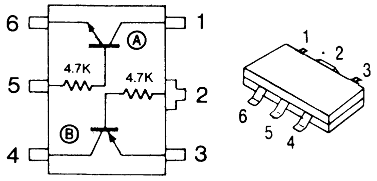
UN5117



BA6430S

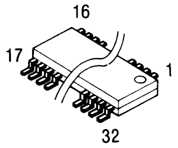

20
16
15
1
11
5
6
10

TA8402F

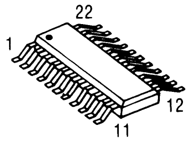

6
5
4
1
2
3
Ⓐ
Ⓑ
4.7K
4.7K
1
2
3
6
5
4

XN4316

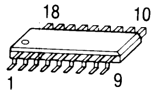
LUMINANCE & CHROMINANCE Section



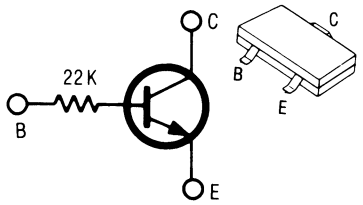
AN3321S



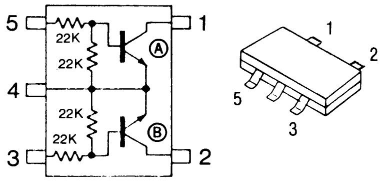
AN3311S
AN6367S



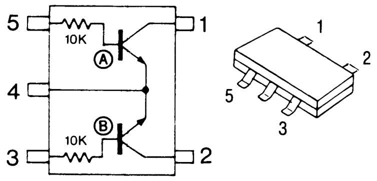
MN6163AS



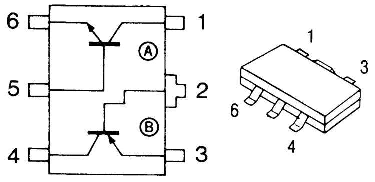
UN5217


5
4
3
1
2
22K
22K
22K
22K
Ⓐ
Ⓑ
1
2
5
3

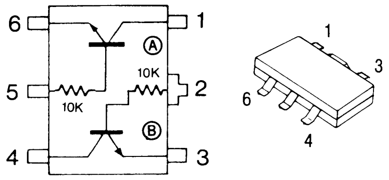
XN1212


5
4
3
1
2
10K
10K
Ⓐ
Ⓑ
1
2
5
3

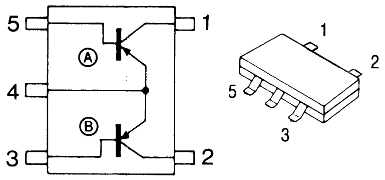
XN1215


6
5
4
1
2
3
Ⓐ
Ⓑ
1
3
6
4

XN4601


6
5
4
1
2
3
Ⓐ
Ⓑ
10K
10K
1
3
6
4

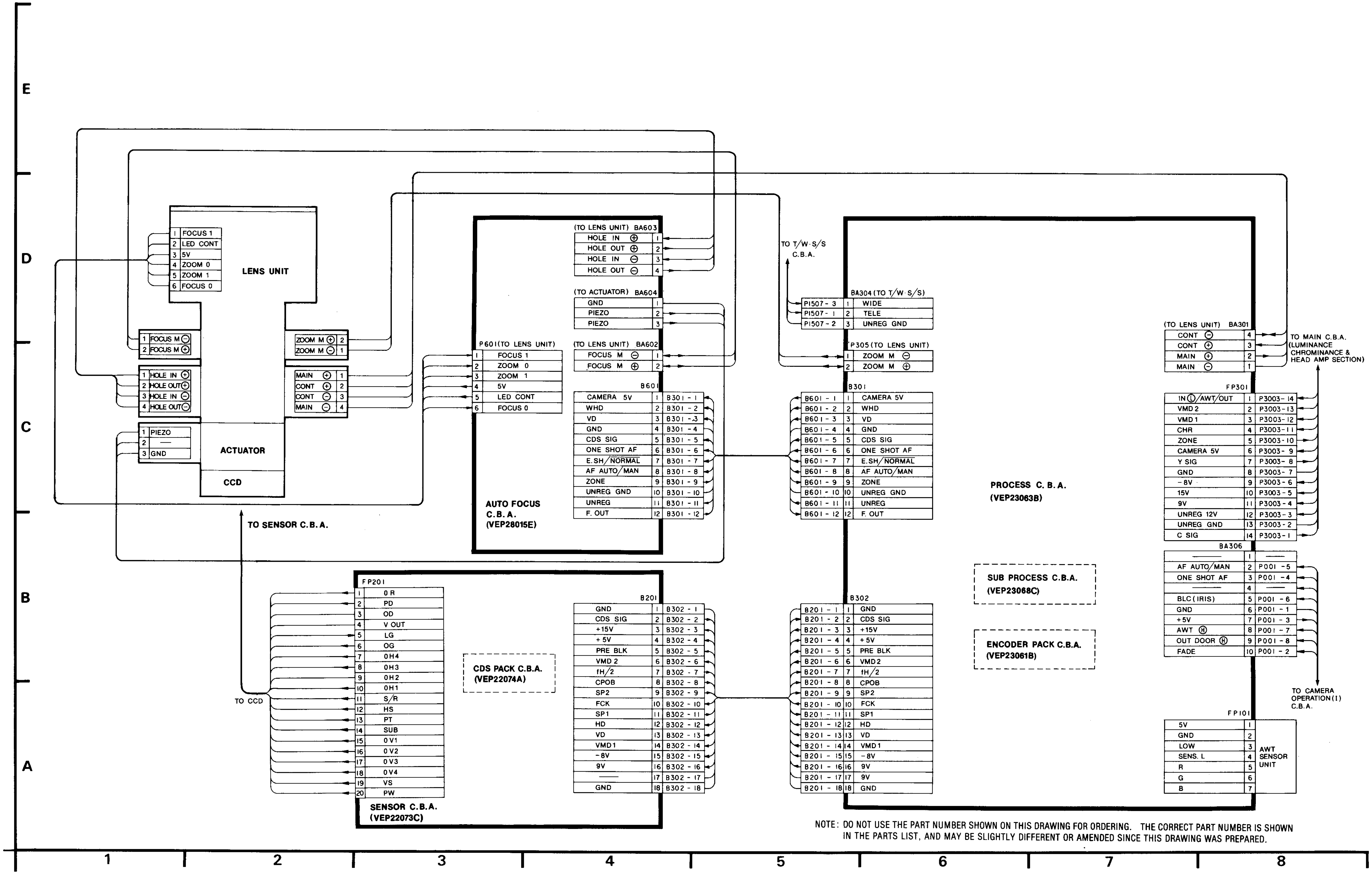
XN4201



XN1401

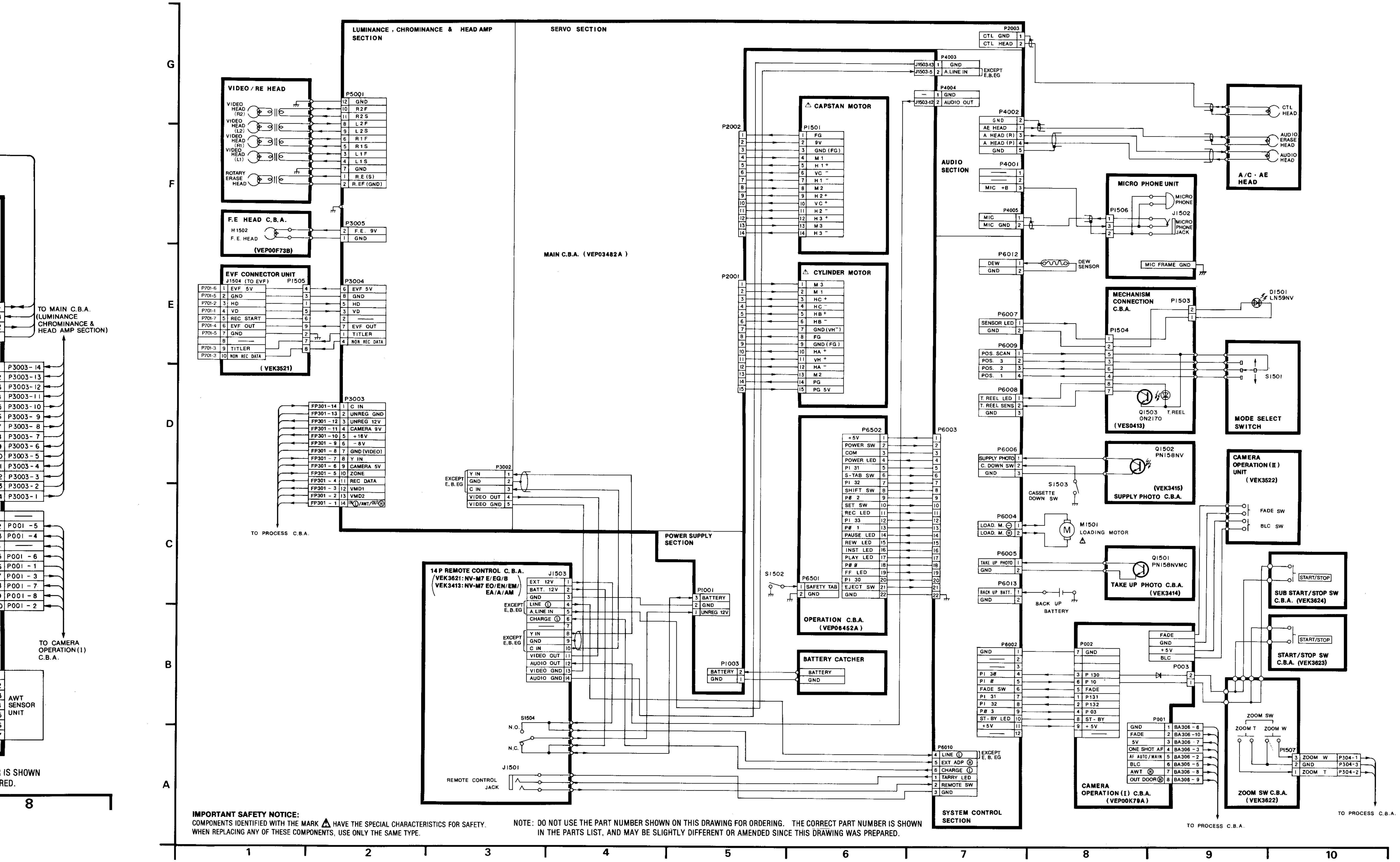
MEMO

3-28. CAMERA INTERCONNECTION SCHEMATIC DIAGRAM


E
D
C
B
A
1
2
3
4
5
6
7
8
LENS UNIT
1 FOCUS 1
2 LED CONT
3 5V
4 ZOOM 0
5 ZOOM 1
6 FOCUS 0
1 FOCUS M ⊖
2 FOCUS M ⊕
ZOOM M ⊕ 2
ZOOM M ⊖ 1
1 HOLE IN ⊕
2 HOLE OUT ⊕
3 HOLE IN ⊖
4 HOLE OUT ⊖
MAIN ⊕ 1
CONT ⊕ 2
CONT ⊖ 3
MAIN ⊖ 4
1 PIEZO
2 —
3 GND
ACTUATOR
CCD
TO SENSOR C.B.A.
TO CCD
AUTO FOCUS C.B.A. (VEP28015E)
(TO LENS UNIT) BA603
HOLE IN ⊕ 1
HOLE OUT ⊕ 2
HOLE IN ⊖ 3
HOLE OUT ⊖ 4
(TO ACTUATOR) BA604
GND 1
PIEZO 2
PIEZO 3
P601 (TO LENS UNIT)
1 FOCUS 1
2 ZOOM 0
3 ZOOM 1
4 5V
5 LED CONT
6 FOCUS 0
(TO LENS UNIT) BA602
FOCUS M ⊖ 1
FOCUS M ⊕ 2
B601
CAMERA 5V 1 B301 - 1
WHD 2 B301 - 2
VD 3 B301 - 3
GND 4 B301 - 4
CDS SIG 5 B301 - 5
ONE SHOT AF 6 B301 - 6
E.SH/NORMAL 7 B301 - 7
AF AUTO/MAN 8 B301 - 8
ZONE 9 B301 - 9
UNREG GND 10 B301 - 10
UNREG 11 B301 - 11
F. OUT 12 B301 - 12
SENSOR C.B.A. (VEP22073C)
FP201
1 0 R
2 PD
3 OD
4 V OUT
5 LG
6 OG
7 0H4
8 0H3
9 0H2
10 0H1
11 S/R
12 HS
13 PT
14 SUB
15 0V1
16 0V2
17 0V3
18 0V4
19 VS
20 PW
CDS PACK C.B.A. (VEP22074A)
B201
GND 1 B302 - 1
CDS SIG 2 B302 - 2
+15V 3 B302 - 3
+5V 4 B302 - 4
PRE BLK 5 B302 - 5
VMD 2 6 B302 - 6
fH/2 7 B302 - 7
CPOB 8 B302 - 8
SP2 9 B302 - 9
FCK 10 B302 - 10
SP1 11 B302 - 11
HD 12 B302 - 12
VD 13 B302 - 13
VMD1 14 B302 - 14
-8V 15 B302 - 15
9V 16 B302 - 16
— 17 B302 - 17
GND 18 B302 - 18
TO T/W·S/S C.B.A.
BA304 (TO T/W·S/S)
P1507 - 3 1 WIDE
P1507 - 1 2 TELE
P1507 - 2 3 UNREG GND
P305 (TO LENS UNIT)
1 ZOOM M ⊖
2 ZOOM M ⊕
B301
B601 - 1 1 CAMERA 5V
B601 - 2 2 WHD
B601 - 3 3 VD
B601 - 4 4 GND
B601 - 5 5 CDS SIG
B601 - 6 6 ONE SHOT AF
B601 - 7 7 E.SH/NORMAL
B601 - 8 8 AF AUTO/MAN
B601 - 9 9 ZONE
B601 - 10 10 UNREG GND
B601 - 11 11 UNREG
B601 - 12 12 F. OUT
B302
B201 - 1 1 GND
B201 - 2 2 CDS SIG
B201 - 3 3 +15V
B201 - 4 4 +5V
B201 - 5 5 PRE BLK
B201 - 6 6 VMD2
B201 - 7 7 fH/2
B201 - 8 8 CPOB
B201 - 9 9 SP2
B201 - 10 10 FCK
B201 - 11 11 SP1
B201 - 12 12 HD
B201 - 13 13 VD
B201 - 14 14 VMD1
B201 - 15 15 -8V
B201 - 16 16 9V
B201 - 17 17 9V
B201 - 18 18 GND
PROCESS C. B. A. (VEP23063B)
SUB PROCESS C.B.A. (VEP23068C)
ENCODER PACK C.B.A. (VEP23061B)
(TO LENS UNIT) BA301
CONT ⊖ 4
CONT ⊕ 3
MAIN ⊕ 2
MAIN ⊖ 1
TO MAIN C.B.A. (LUMINANCE CHROMINANCE & HEAD AMP SECTION)
FP301
IN Ⓘ/AWT/OUT 1 P3003 - 14
VMD 2 2 P3003 - 13
VMD 1 3 P3003 - 12
CHR 4 P3003 - 11
ZONE 5 P3003 - 10
CAMERA 5V 6 P3003 - 9
Y SIG 7 P3003 - 8
GND 8 P3003 - 7
-8V 9 P3003 - 6
15V 10 P3003 - 5
9V 11 P3003 - 4
UNREG 12V 12 P3003 - 3
UNREG GND 13 P3003 - 2
C SIG 14 P3003 - 1
BA306
— 1 —
AF AUTO/MAN 2 P001 - 5
ONE SHOT AF 3 P001 - 4
— 4 —
BLC (IRIS) 5 P001 - 6
GND 6 P001 - 1
+5V 7 P001 - 3
AWT Ⓗ 8 P001 - 7
OUT DOOR Ⓗ 9 P001 - 8
FADE 10 P001 - 2
TO CAMERA OPERATION (I) C.B.A.
FP101
5V 1
GND 2
LOW 3
SENS. L 4
R 5
G 6
B 7
AWT SENSOR UNIT

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

3-29. VTR INTERCONNECTION SCHEMATIC DIAGRAM

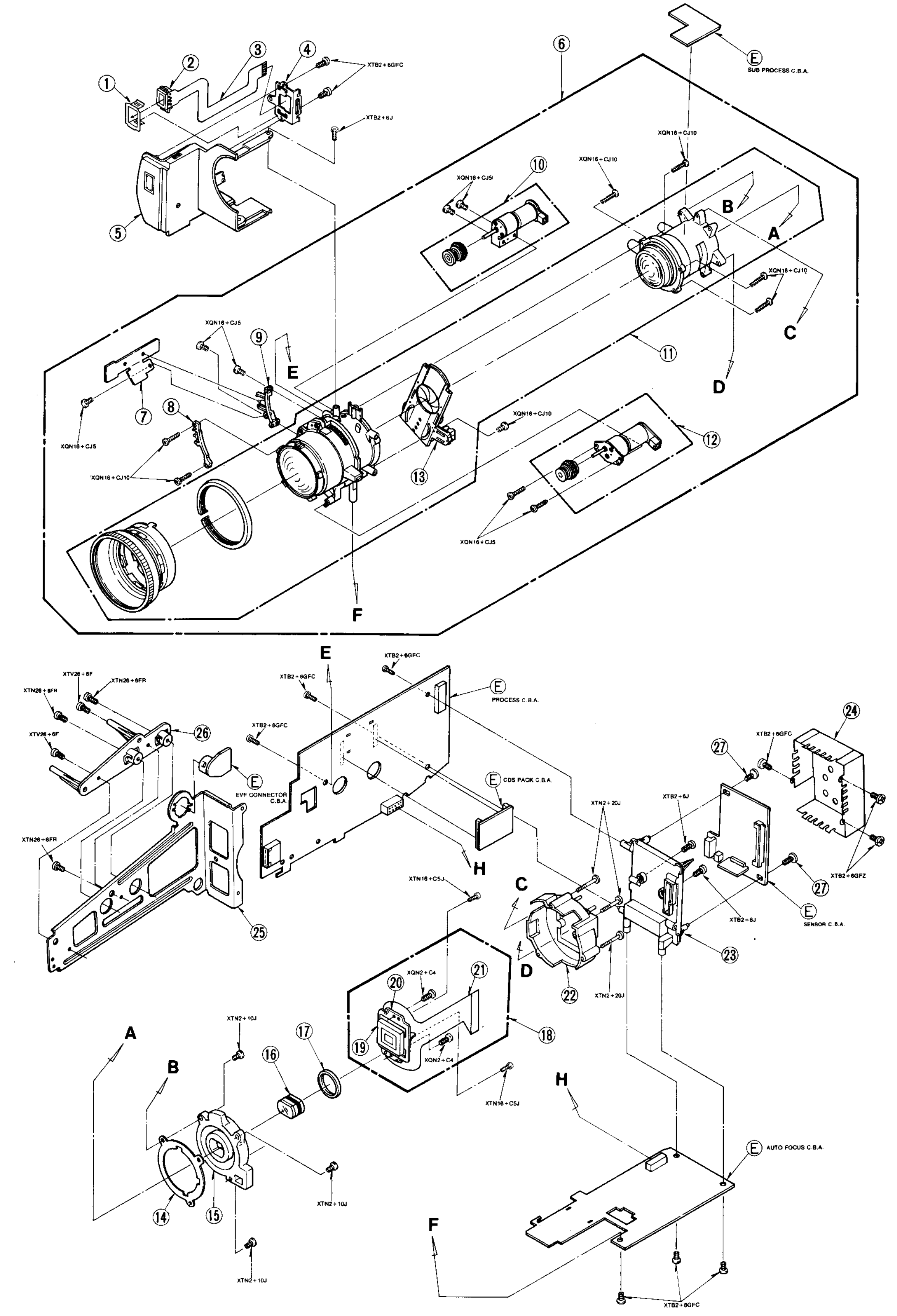

G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
LUMINANCE , CHROMINANCE & HEAD AMP SECTION
SERVO SECTION
MAIN C.B.A. (VEP03482A)
POWER SUPPLY SECTION
AUDIO SECTION
SYSTEM CONTROL SECTION
VIDEO / RE HEAD
VIDEO HEAD (R2)
VIDEO HEAD (L2)
VIDEO HEAD (R1)
VIDEO HEAD (L1)
ROTARY ERASE HEAD
P5001
12 GND
10 R2F
11 R2S
8 L2F
9 L2S
6 R1F
5 R1S
3 L1F
4 L1S
7 GND
1 R.E (S)
2 R.EF (GND)
F.E HEAD C.B.A.
H1502 F.E. HEAD
(VEP00F73B)
P3005
2 F.E. 9V
1 GND
EVF CONNECTOR UNIT
J1504 (TO EVF)
P1505
P701-6 1 EVF 5V
P701-5 2 GND
P701-2 3 HD
P701-1 4 VD
P701-7 5 REC START
P701-4 6 EVF OUT
P701-5 7 GND
8
P701-3 9 TITLER
P701-3 10 NON REC DATA
(VEK3521)
P3004
6 EVF 5V
8 GND
5 HD
3 VD
2
7 EVF OUT
1 TITLER
4 NON REC DATA
P3003
FP301-14 1 C IN
FP301-13 2 UNREG GND
FP301-12 3 UNREG 12V
FP301-11 4 CAMERA 9V
FP301-10 5 +16V
FP301-9 6 -8V
FP301-8 7 GND (VIDEO)
FP301-7 8 Y IN
FP301-6 9 CAMERA 5V
FP301-5 10 ZONE
FP301-4 11 REC DATA
FP301-3 12 VMD1
FP301-2 13 VMD2
FP301-1 14 IN/AWT/OUT
TO PROCESS C.B.A.
P3002
EXCEPT E.B.EG
Y IN 1
GND 2
C IN 3
VIDEO OUT 4
VIDEO GND 5
P2002
P2001
CAPSTAN MOTOR
P1501
1 FG
2 9V
3 GND (FG)
4 M1
5 H1+
6 VC−
7 H1−
8 M2
9 H2+
10 VC+
11 H2−
12 H3+
13 M3
14 H3−
CYLINDER MOTOR
1 M3
2 M1
3 HC+
4 HC−
5 HB+
6 HB−
7 GND (VH−)
8 FG
9 GND (FG)
10 HA+
11 VH+
12 HA−
13 M2
14 PG
15 PG 5V
P6502
+5V 1
POWER SW 2
COM 3
POWER LED 4
PI 31 5
S-TAB SW 6
PI 32 7
SHIFT SW 8
PØ 2 9
SET SW 10
REC LED 11
PI 33 12
PØ 1 13
PAUSE LED 14
REW LED 15
INST LED 16
PLAY LED 17
PØ Ø 18
FF LED 19
PI 30 20
EJECT SW 21
GND 22
P6501
1 SAFETY TAB
2 GND
S1502
OPERATION C.B.A. (VEP06452A)
P6003
BATTERY CATCHER
BATTERY
GND
P1003
BATTERY 2
GND 1
P1001
3 BATTERY
2 GND
1 UNREG 12V
14P REMOTE CONTROL C.B.A.
(VEK3621: NV-M7 E/EG/B
VEK3413: NV-M7 EO/EN/EM/EA/A/AM)
J1503
EXT 12V 1
BATT. 12V 2
GND 3
EXCEPT E.B.EG
LINE Ⓛ 4
A.LINE IN 5
CHARGE Ⓛ 6
7
EXCEPT E.B.EG
Y IN 8
GND 9
C IN 10
VIDEO OUT 11
AUDIO OUT 12
VIDEO GND 13
AUDIO GND 14
S1504
N.O.
N.C.
J1501
REMOTE CONTROL JACK
P2003
CTL GND 1
CTL HEAD 2
P4003
J1503-13 1 GND
J1503-5 2 A.LINE IN
EXCEPT E.B.EG
P4004
— 1 GND
J1503-12 2 AUDIO OUT
P4002
GND 2
AE HEAD 1
A. HEAD (R) 3
A. HEAD (P) 4
GND 5
P4001
1
2
MIC +B 3
P4005
MIC 1
MIC GND 2
A/C · AE HEAD
CTL HEAD
AUDIO ERASE HEAD
AUDIO HEAD
MICRO PHONE UNIT
P1506
J1502
MICRO PHONE
MICRO PHONE JACK
MIC FRAME GND
P6012
DEW 1
GND 2
DEW SENSOR
P6007
SENSOR LED 1
GND 2
MECHANISM CONNECTION C.B.A.
P1503
P1504
D1501 LN59NV
P6009
POS. SCAN 1
POS. 3 2
POS. 2 3
POS. 1 4
P6008
T. REEL LED 1
T. REEL SENS 2
GND 3
Q1503 ON2170
T. REEL
(VES0413)
S1501
MODE SELECT SWITCH
P6006
SUPPLY PHOTO 1
C. DOWN SW 2
GND 3
Q1502 PN158NV
(VEK3415)
SUPPLY PHOTO C.B.A.
S1503
CASSETTE DOWN SW
CAMERA OPERATION (II) UNIT (VEK3522)
FADE SW
BLC SW
P6004
LOAD. M. ⊖ 1
LOAD. M. ⊕ 2
M1501 LOADING MOTOR
P6005
TAKE UP PHOTO 1
GND 2
Q1501 PN158NVMC
TAKE UP PHOTO C.B.A. (VEK3414)
P6013
BACK UP BATT. 1
GND 2
BACK UP BATTERY
START/STOP
SUB START/STOP SW C.B.A. (VEK3624)
START/STOP
START/STOP SW C.B.A. (VEK3623)
P6002
GND 1
2
3
PI 3Ø 4
PI Ø 5
FADE SW 6
PI 31 7
PI 32 8
PØ 3 9
ST-BY LED 10
+5V 11
12
P002
7 GND
3 P130
6 P10
5 FADE
1 P131
2 P132
4 P03
8 ST-BY
9 +5V
FADE
GND
+5V
BLC
P003
P001
GND 1 BA306-6
FADE 2 BA306-10
5V 3 BA306-7
ONE SHOT AF 4 BA306-3
AF AUTO/MAIN 5 BA306-2
BLC 6 BA306-5
AWT Ⓗ 7 BA306-8
OUT DOOR Ⓗ 8 BA306-9
CAMERA OPERATION (I) C.B.A. (VEP00K79A)
ZOOM SW
ZOOM T
ZOOM W
P1507
3 ZOOM W P304-1
2 GND P304-3
1 ZOOM T P304-2
ZOOM SW C.B.A. (VEK3622)
TO PROCESS C.B.A.
TO PROCESS C.B.A.
P6010
4 LINE Ⓛ
5 EXT ADP Ⓗ
6 CHARGE Ⓛ
1 TARRY LED
2 REMOTE SW
3 GND
EXCEPT E.B.EG
TO MAIN C.B.A. (LUMINANCE CHROMINANCE & HEAD AMP SECTION)
P3003-14
P3003-13
P3003-12
P3003-11
P3003-10
P3003-9
P3003-8
P3003-7
P3003-6
P3003-5
P3003-4
P3003-3
P3003-2
P3003-1
P001-5
P001-4
P001-6
P001-1
P001-3
P001-7
P001-8
P001-2
TO CAMERA OPERATION (I) C.B.A.
AWT SENSOR UNIT
IS SHOWN
RED.
8

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

SECTION 4
EXPLODED VIEWS & PARTS LIST

4-1. EXPLODED VIEWS ❶ CAMERA LENS SECTION



①
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⑬
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⑮
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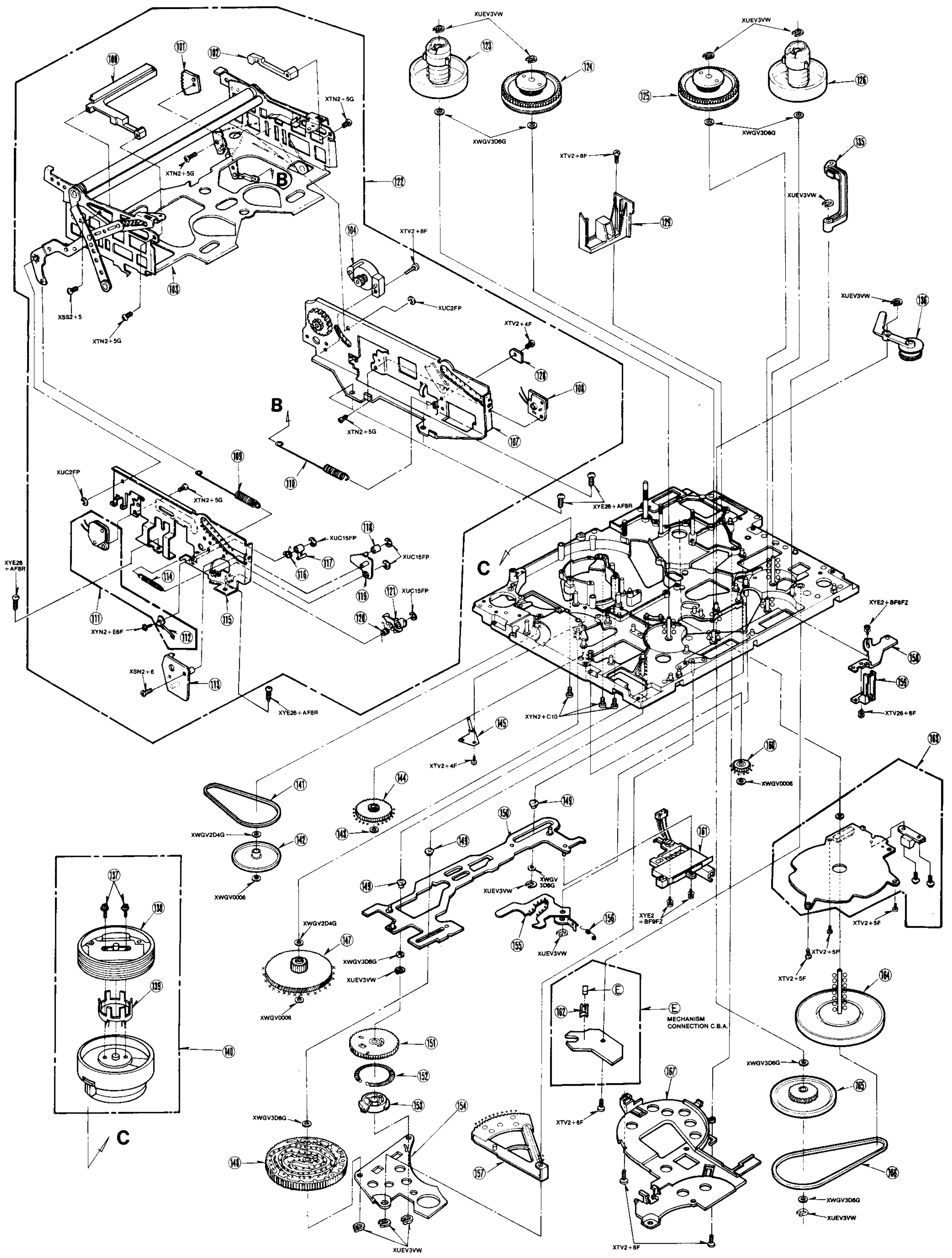
⑰
⑱
⑲
⑳
㉑
㉒
㉓
㉔
㉕
㉖
㉗
A
B
C
D
E
F
H
XTB2+6GFC
XTB2+6J
XQN16+CJ5
XQN16+CJ10
SUB PROCESS C.B.A.
PROCESS C.B.A.
EVF CONNECTOR C.B.A.
CDS PACK C.B.A.
SENSOR C.B.A.
AUTO FOCUS C.B.A.
XTV26+6F
XTN26+6FR
XTN2+20J
XTN2+10J
XQN2+C4
XTN16+C5J
XTB2+6GFZ

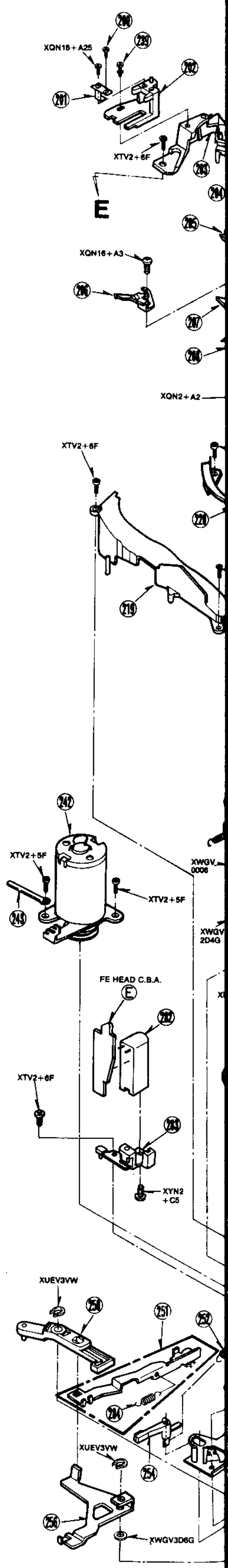
Back Page:
INTERCONNECTION Section

❷ VTR MECHANISM SECTION (1)

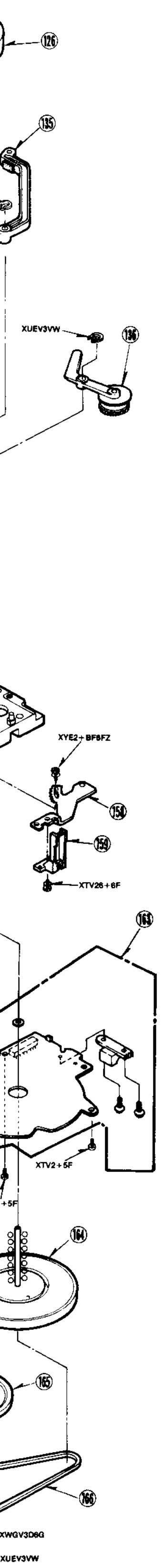


A
B
C
E
XUEV3VW
XWGV3D6G
XTN2+5G
XTV2+8F
XUC2FP
XTV2+4F
XSS2+5
XYE26+AF8R
XYN2+E6F
XSN2+6
XUC15FP
XYN2+C10
XWGV2D4G
XWGV0006
XYE2+BF6FZ
XTV2+5F
XTV2+6F
MECHANISM CONNECTION C.B.A.

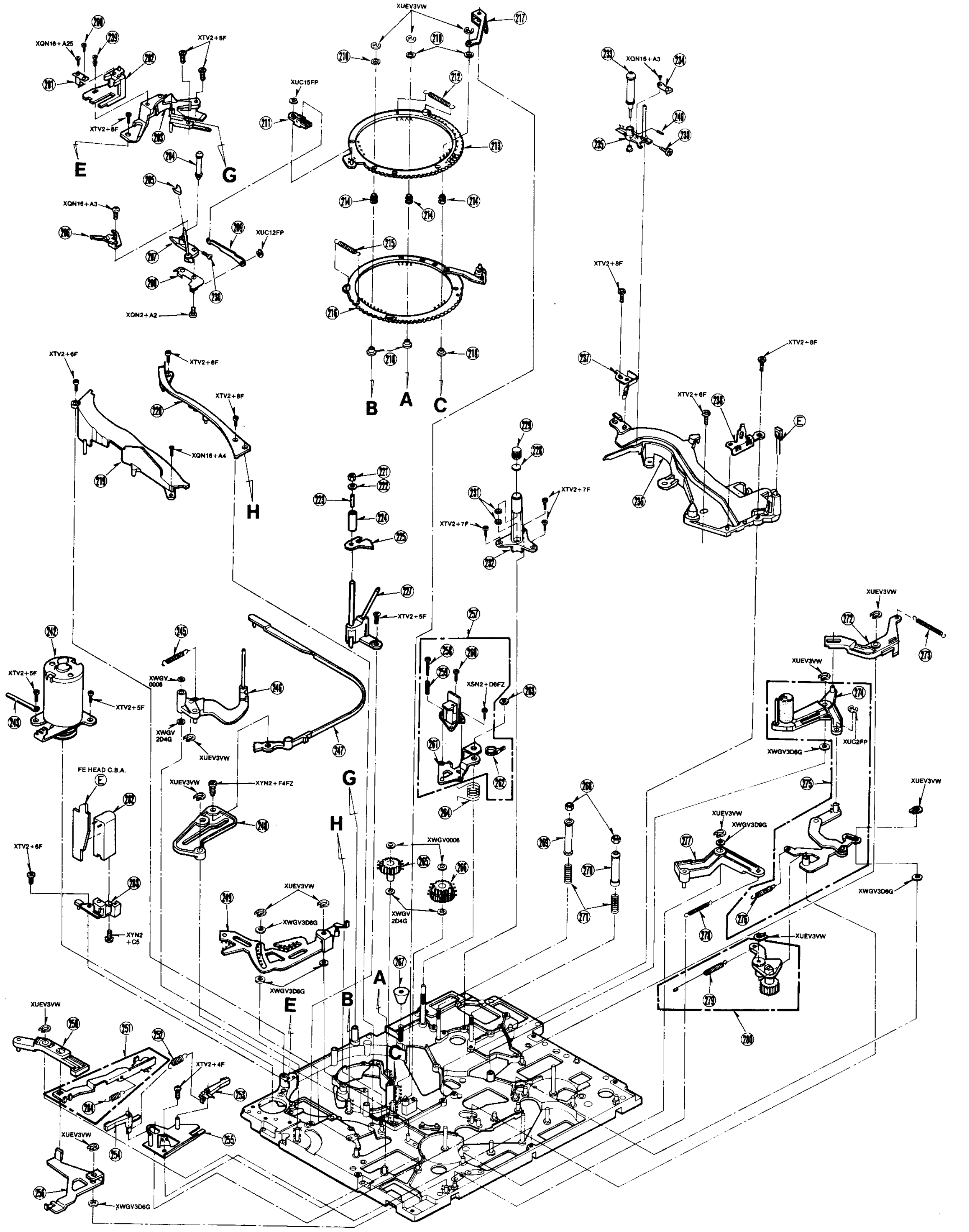
❸ VTR MECHA



E
XQN16+A25
XQN16+A3
XQN2+A2
XTV2+6F
XTV2+5F
FE HEAD C.B.A.
XYN2+C5
XUEV3VW
XWGV3D6G


126
135
136
XUEV3VW
XYE2+8F8FZ
150
159
XTV26+6F
163
XTV2+5F
+5F
164
165
166
XWGV3D6G
XUEV3VW

❸ VTR MECHANISM SECTION (2)


XQN16+A25
XTV2+8F
XUC15FP
XUEV3VW
XTV2+8F
E
G
XQN16+A3
XUC12FP
XQN2+A2
B
A
C
XQN16+A3
XTV2+8F
XTV2+6F
XTV2+8F
XTV2+8F
XQN16+A4
H
XTV2+6F
XTV2+7F
XTV2+7F
XTV2+5F
XTV2+5F
XTV2+5F
XWGV0008
XWGV2D4G
XUEV3VW
XSN2+D6FZ
FE HEAD C.B.A.
E
XUEV3VW
XYN2+F4FZ
G
H
XTV2+8F
XYN2+C5
XUEV3VW
XWGV3D6G
XWGV0008
XWGV2D4G
E
B
A
C
XUEV3VW
XUEV3VW
XWGV3D6G
XUC2FP
XUEV3VW
XWGV3D6G
XUEV3VW
XWGV3D6G
XUEV3VW
XTV2+4F
XUEV3VW
XWGV3D6G
XUEV3VW
201
202
203
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205
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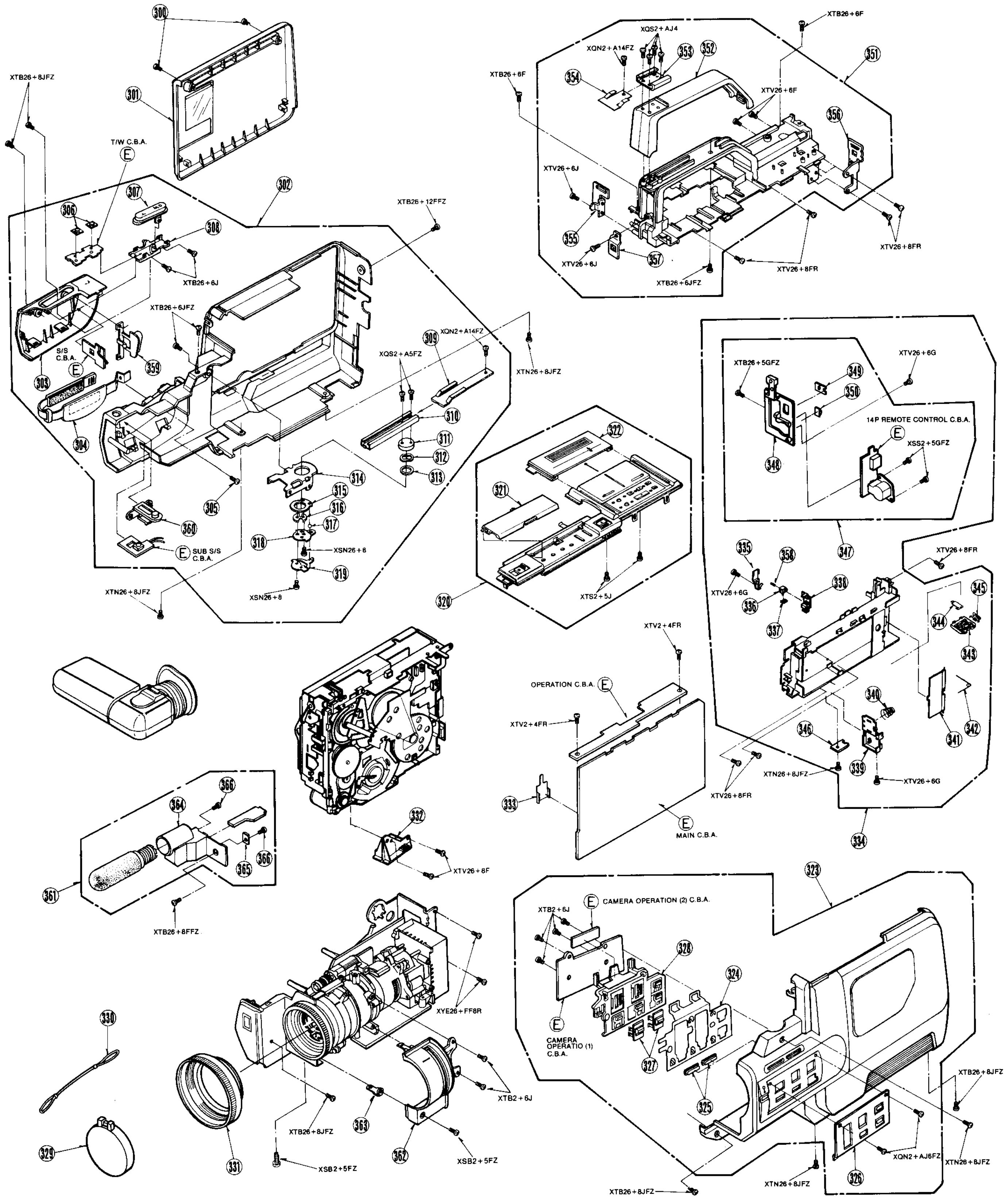
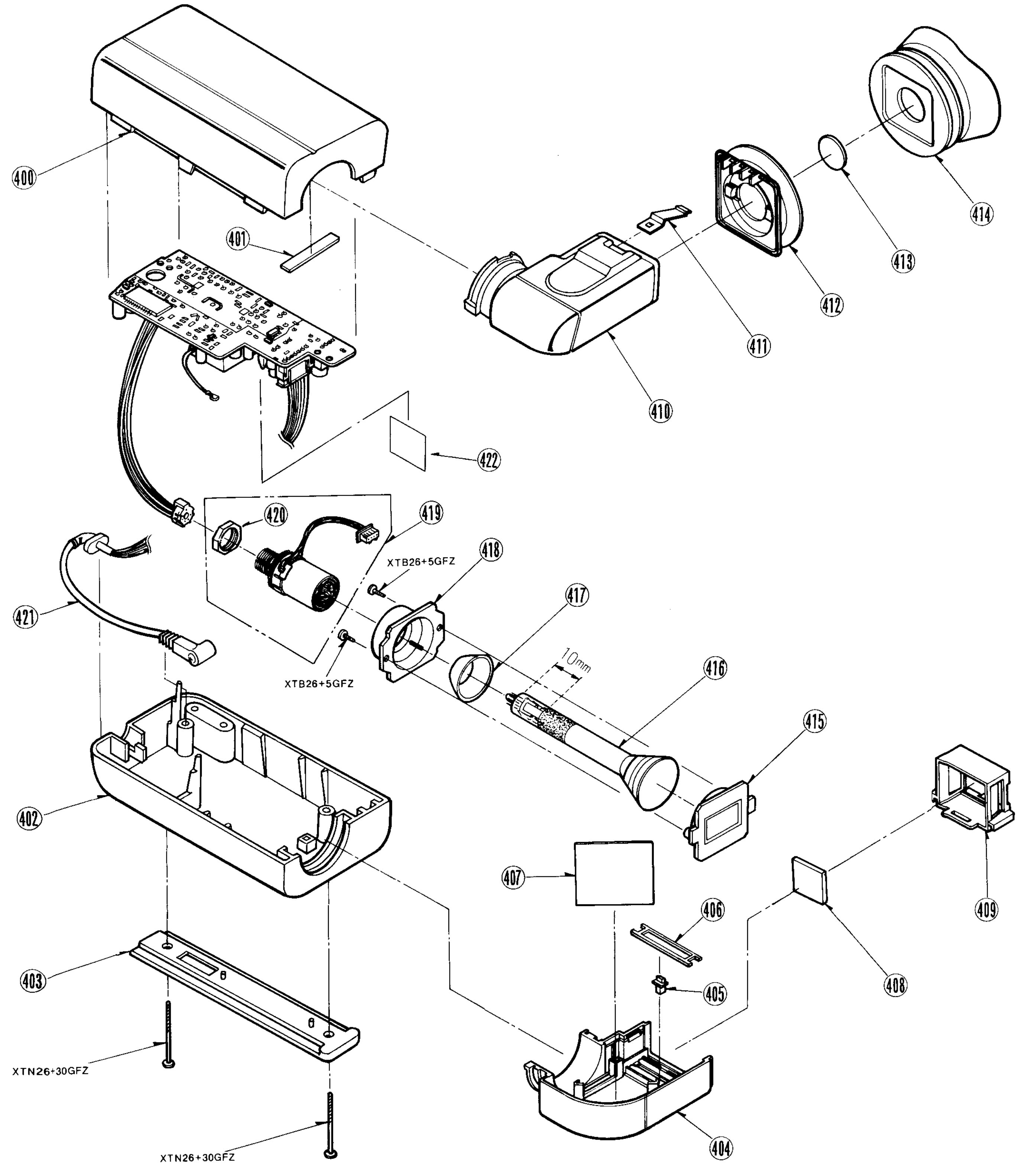
❹ CHASSIS & FRAME SECTION


300
301
XTB26+8JFZ
T/W C.B.A.
E
302
306
307
308
XTB26+6J
S/S C.B.A.
E
303
XTB26+6JFZ
359
304
305
360
E SUB S/S C.B.A.
XTN26+8JFZ
XTB26+12FFZ
XQS2+A5FZ
309
XQN2+A14FZ
XTN26+8JFZ
310
311
312
313
314
315
316
317
318
XSN26+6
XSN26+8
319
XTB26+6F
XQS2+AJ4
XQN2+A14FZ
354
353
352
351
XTB26+6F
XTV26+6F
356
XTV26+6J
355
XTV26+6J
357
XTB26+6JFZ
XTV26+8FR
XTV26+8FR
322
321
320
XTS2+5J
XTB26+5GFZ
349
350
XTV26+6G
348
14P REMOTE CONTROL C.B.A.
E
XSS2+5GFZ
347
335
358
338
XTV26+6G
336
337
XTV26+8FR
345
344
343
340
346
339
XTV26+6G
341
342
XTN26+8JFZ
XTV26+8FR
334
XTV2+4FR
OPERATION C.B.A.
E
XTV2+4FR
333
E
MAIN C.B.A.
332
XTV26+8F
364
366
365
366
361
XTB26+8FFZ
330
329
331
XTB26+8JFZ
XSB2+5FZ
363
362
XSB2+5FZ
XYE26+FF8R
XTB2+6J
323
XTB2+6J
E CAMERA OPERATION (2) C.B.A.
328
324
E
CAMERA OPERATIO (1) C.B.A.
327
325
XTB26+8JFZ
XQN2+AJ6FZ
XTN26+8JFZ
326
XTN26+8JFZ
XTB26+8JFZ

❺ E.V.F. SECTION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401
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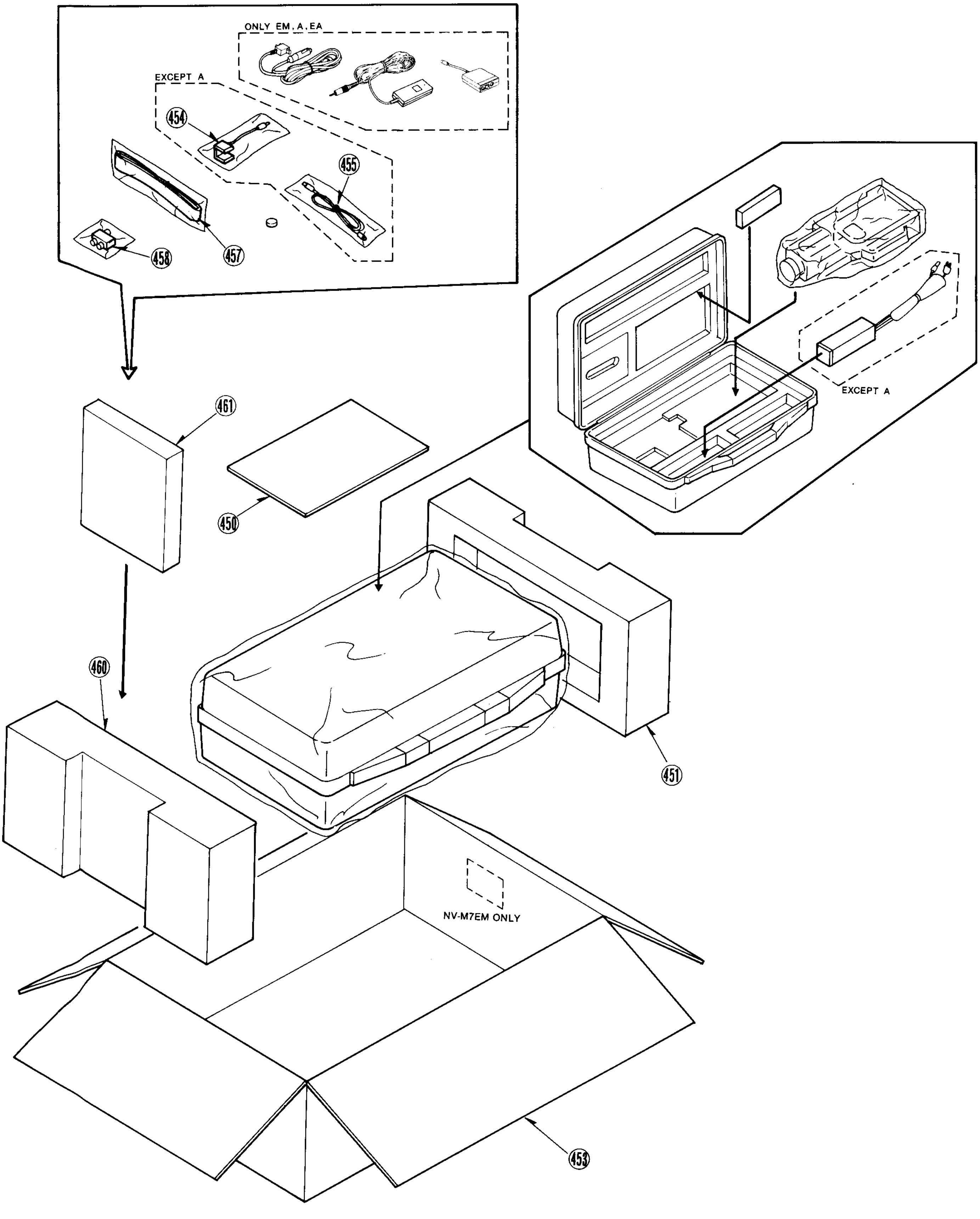
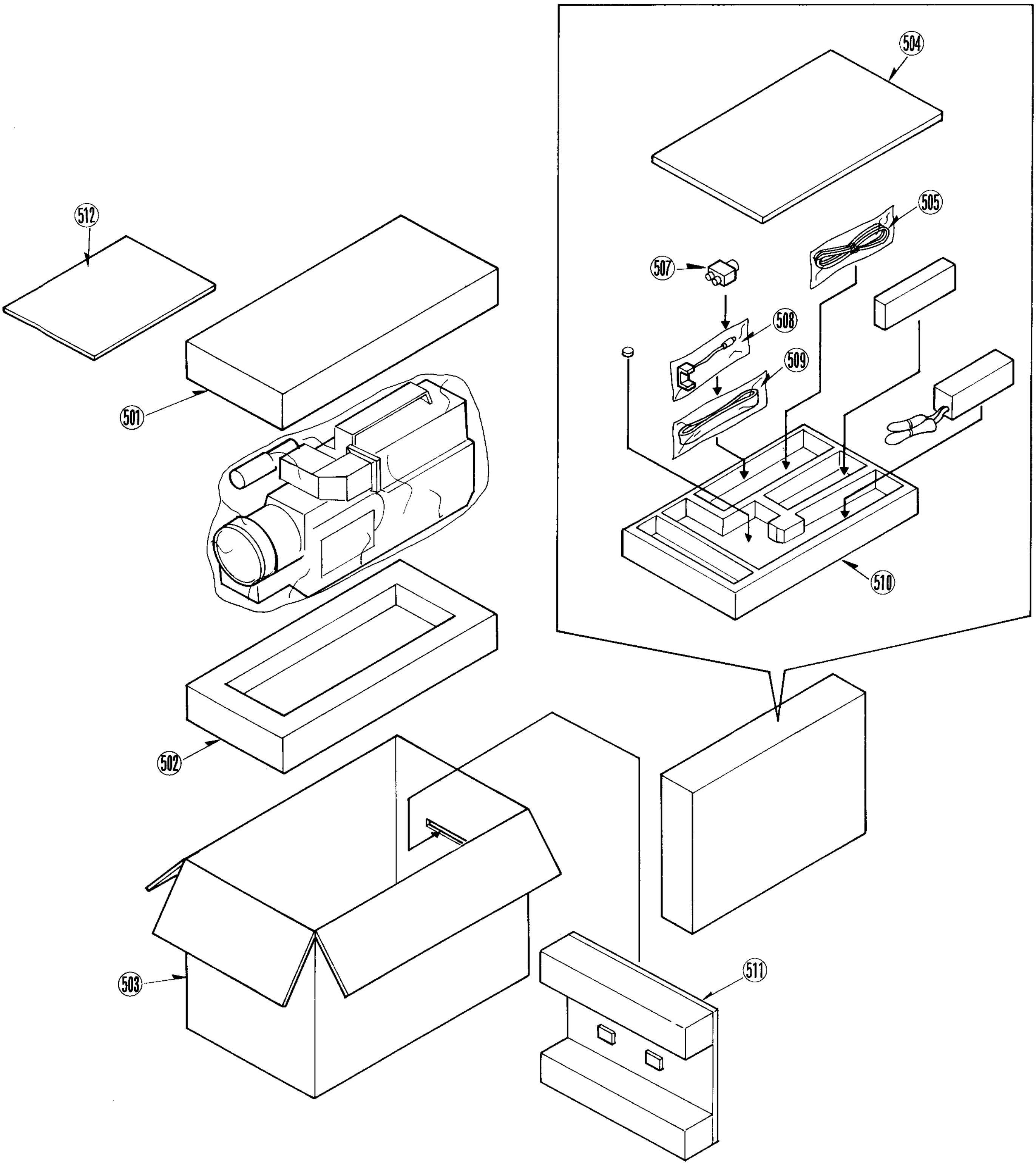
413
412
411
410
422
420
419
418
XTB26+5GFZ
417
421
XTB26+5GFZ
10mm
416
415
402
407
406
409
405
408
403
XTN26+30GFZ
XTN26+30GFZ
404

❻ PACKING PARTS & ACCESSORIES SECTION (NV-M7E/B/EO/EM/EA/A)


ONLY EM, A, EA
EXCEPT A
(454)
(455)
(457)
(458)
EXCEPT A
(461)
(450)
(460)
(451)
NV-M7EM ONLY
(453)

❼ PACKING PARTS & ACCESSORIES SECTION (NV-M7EG/EN)



504
512
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507
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501
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502
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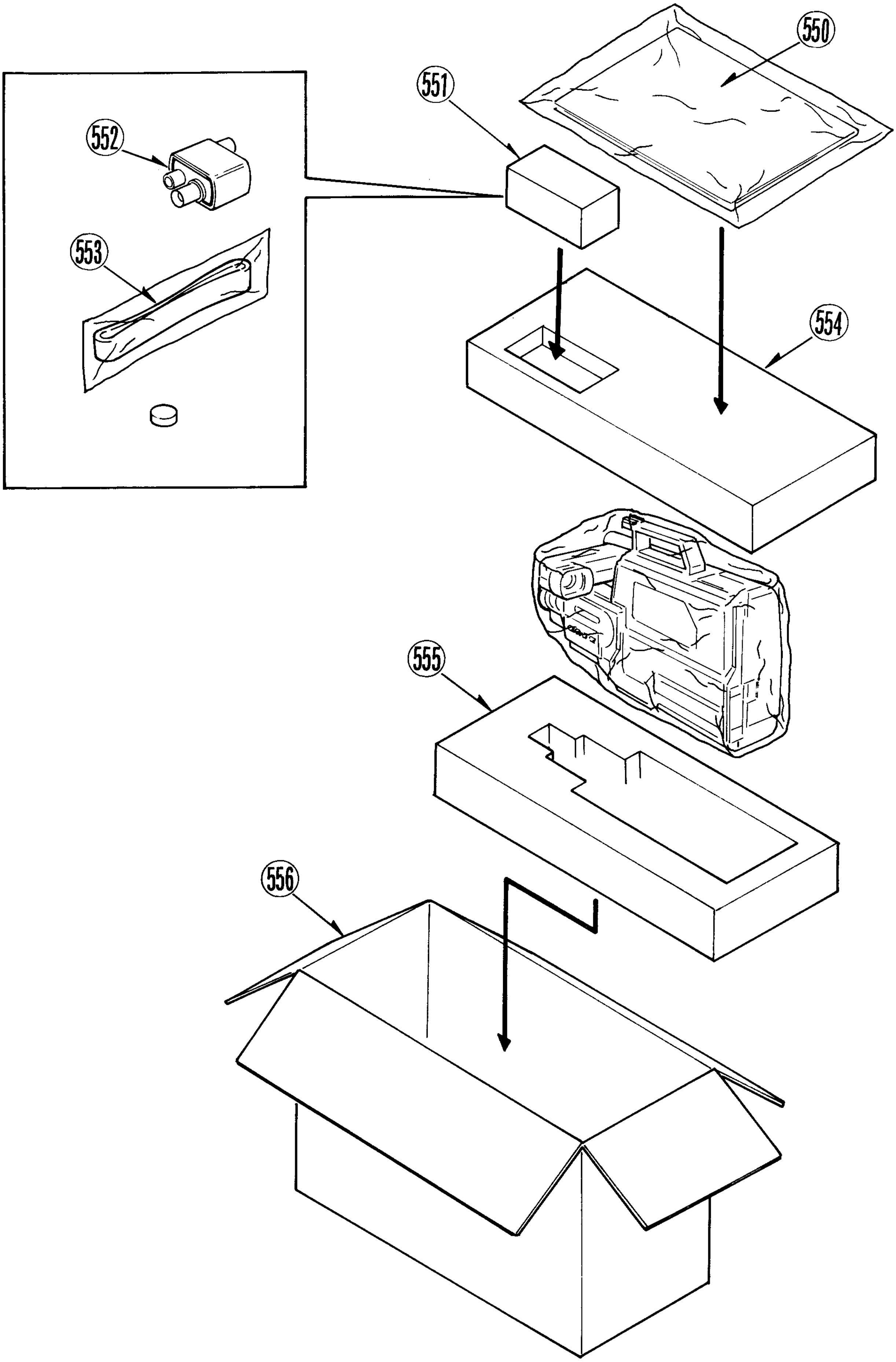
503

❽ PACKING PARTS & ACCESSORIES SECTION (NV-M7AM)


550
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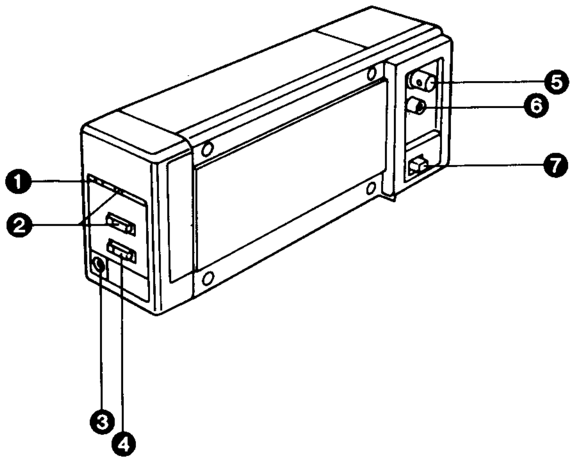
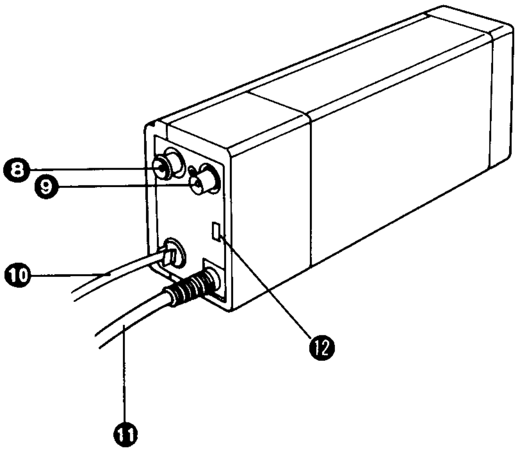
556

1. CONTROLS AND COMPONENTS

FRONT SIDE



REAR SIDE



- ❶ Charging Indicator
- ❷ Operation Switch with Indicator
- ❸ Battery Pack Charging Socket
- ❹ TV/VTR Selector
- ❺ Video Output Socket
- ❻ Audio Output Socket
- ❼ Power On/Off Switch
- ❽ RF Input Socket
- ❾ RF Output Socket
- ❿ Mains Lead
- ⓫ Adaptor Cable
- ⓬ CH Select (for EN/A/EA)

2. DISASSEMBLY METHOD

1. Removal of Top Case

Unscrew the 4 screws (A) and remove the Top Case.

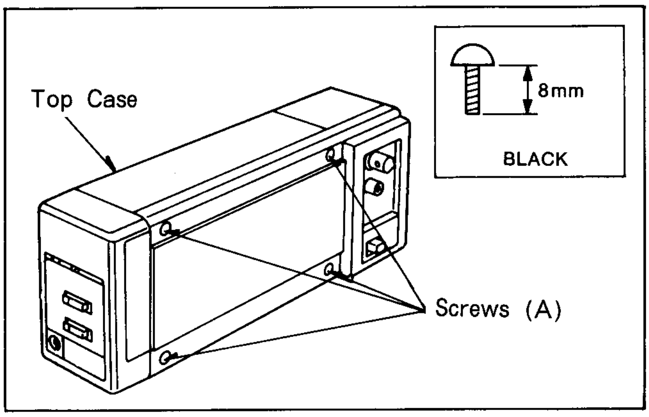

Top Case
8mm
BLACK
Screws (A)

Fig.1

2. Removal of Front Panel

Remove the Front Panel disconnecting the connector P1.

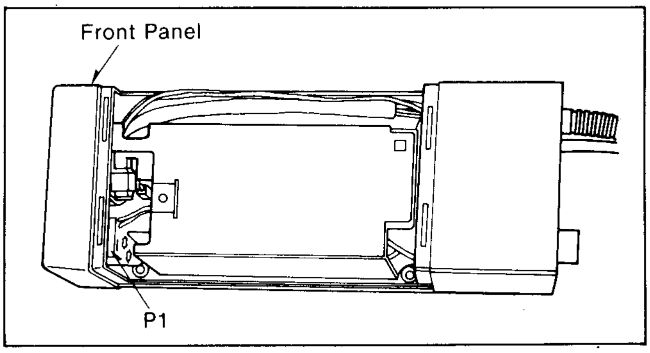

Front Panel
P1

Fig.2

3. Removal of Main Circuit Board

Unscrew the 2 screws (B) and remove the Main Circuit Board.

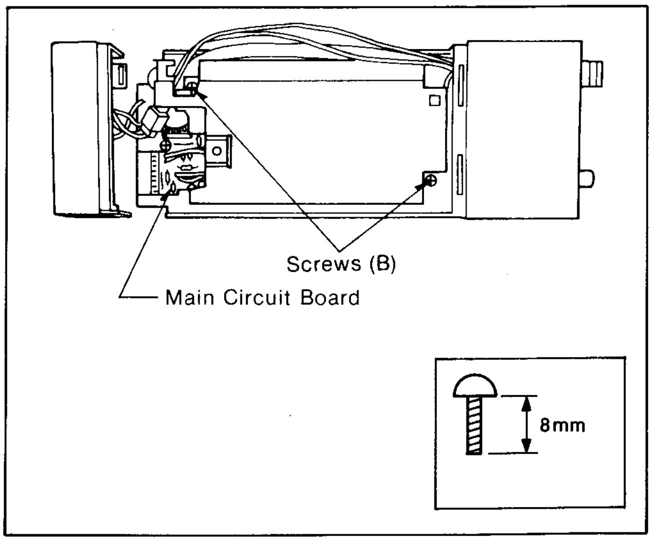

Screws (B)
Main Circuit Board
8mm

Fig.3

4. Removal of Rear Case

Unscrew the 3 screws (C) remove the Rear Case.

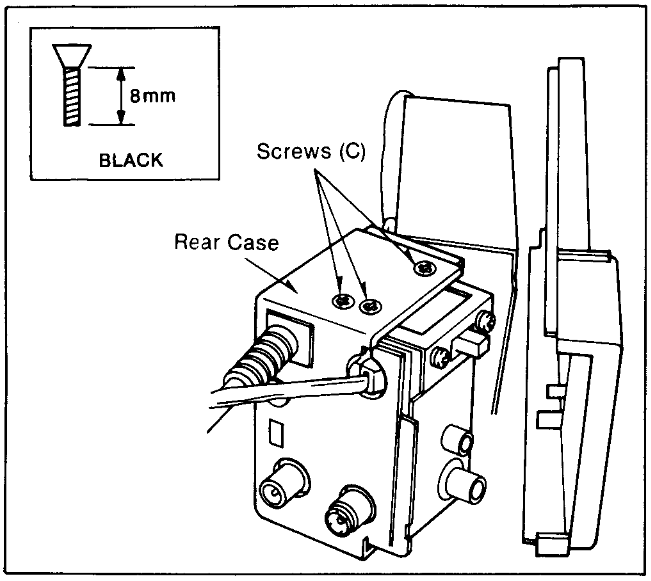

8mm
BLACK
Screws (C)
Rear Case

Fig.4

5. Removal of Main Sield Case

Diconnect the connector P6 and connector (E) and remove the Main Shield Case.

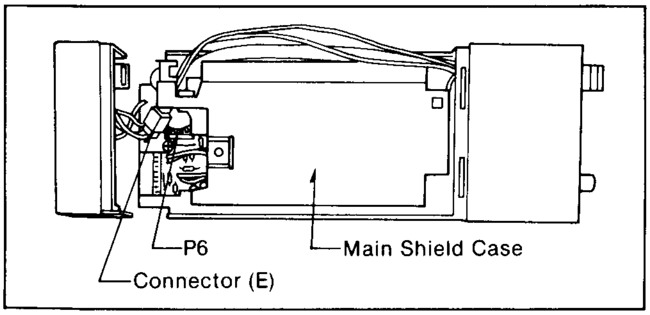

P6
Main Shield Case
Connector (E)

Fig.5

6. Removal of Front Panel Circuit Board

Unscrew the 2 screws (F) and remove the Front Panel Circuit Board.

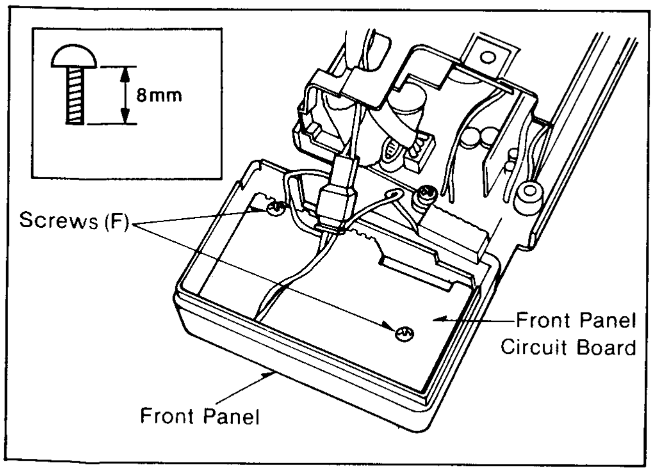

8mm
Screws (F)
Front Panel Circuit Board
Front Panel

Fig.6

7. Removal of A–V Terminal Circuit Board

Remove shield case and unscrew the 2 screws (G) and remove the A–V Terminal Circuit Board.

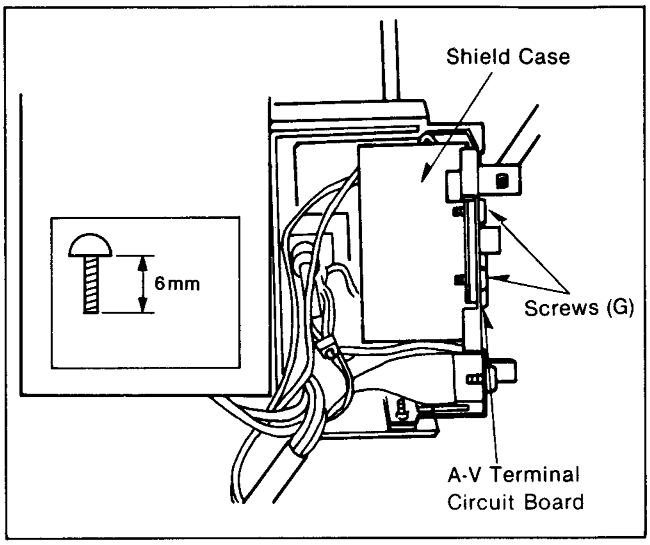

Shield Case
6mm
Screws (G)
A-V Terminal Circuit Board

Fig.7

3. ELECTRICAL ADJUSTMENT PROCEDURES

This section provides complete electrical adjustment procedures which may be required for electronic circuit of the AC Adaptor.

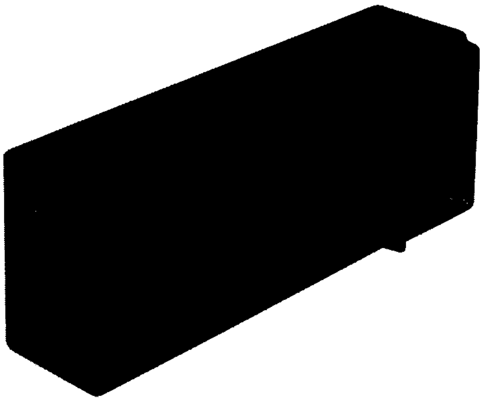
3-1. TEST EQUIPMENTS

To perform the electrical adjustments completely following equipments are required.

1. D.V.M. (Digital Volt Meter)
   Voltage Range :0.001~50V
2. Oscilloscope
   Voltage Range :0.005~50V/div
3. DC Ammeter
   Current Range :0~10A
4. DC Voltmeter
   Voltage Range :0~20V
5. Plastic Tip Driver
6. Resistor (5ohm Variable 200W)
7. DC Power Supply (5A/20V)

AC Adaptor

VW-AM7 E/BA B/EA EN/A EM



ITEM	SPECIFICATION	ITEM	SPECIFICATION
POWER	SOURCE: 100~240 V AC 50/60 Hz (Automatic Voltage Adjustment)	RF OUT SYSTEM	VHF: CH3/4, 76±3 dBμ, 75Ω unbalanced PAL B (VW-AM7EN/EA) UHF: CH36±4, 70^{+2}_{-3}dBμ, 75Ω unbalanced PAL G (VW-AM7E/EM) VHF: CH0/1, 76±3 dBμ, 75Ω unbalanced PAL B (VW-AM7A) UHF: CH36±4, 73±3 dBμ, 75Ω unbalanced PAL I (VW-AM7B/BA)
	CONSUMPTION: 44 watts		
	OUTPUT: DC 12 V, 1.2 A for VHS Movie DC 20 V, 0.1 A for Heater DC 12 V, 1.5 A for battery charge		
VIDEO	OUTPUT: VIDEO OUT CONNECTOR (BNC) 1.0 Vp-p, 75Ω terminated	DIMENSIONS	63(W) × 84(H) × 220(D) mm
AUDIO	OUTPUT: AUDIO OUT CONNECTOR (Phone Type) −8 dB, less than 2 kΩ	WEIGHT	0.86 kg

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

CAUTION: FOR USE WITH VHS VIDEO MOVIE, MODEL NV-M7.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

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2. DISASSEMBLY METHOD 1
3. ELECTRICAL ADJUSTMENT PROCEDURES 2
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5. AC ADAPTOR SCHEMATIC DIAGRAM 6
6. MAIN C.B.A. (VEP61013A), FRONT PANEL C.B.A. (VEP60054A) & A-V TERMINAL C.B.A. (VEP60052A) 9
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10. RF CONVERTER C.B.A. (ENC47957: VW-AM7B/BA) 11
11. RF CONVERTER SCHEMATIC DIAGRAM (VW-AM7EN/EA) 12
12. RF CONVERTER C.B.A. (ENC47901: VW-AW7EN/EM) 12
13. RF CONVERTER SCHEMATIC DIAGRAM (VW-AM7A) 13
14. RF CONVERTER C.B.A. (ENC47902: VW-AM7A) 13
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PARTS LIST

ORDER NO. VRD8712M156
(Date of issue : DEC, 1987)

MODEL NO : NV-M7E/EG/B/EO/EN/A/EA/EM/AM, VW-AM7E/B/EN/A/EA/EM/BA

1.NV-M7E/EG/B/EO/EN/A/EA/EM/AM

Mechanical Replacement Parts List

※This parts list is detachable from the manual.

Note:1.* Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1(1)		VMP1105	AWT SENSOR HOOK	1	
2(1)		VEK3435	AWT SENSOR	1	
3(1)		VWJ0291	AWT FLEXIBLE CABLE	1	
4(1)		VMP1339	AWT SENSOR ANGLE	1	
5(1)		VYK2017	AWT SENSOR CASE UNIT	1	
6(1)		VXW0004	LENS UNIT	1	
7(1)		VEP30038A	ENCODER C.B.	1	
8(1)		VJF0517	ENCODER HOLDER (A)	1	
9(1)		VJF0518	ENCODER HOLDER (B)	1	
10(1)		VEM0286	ZOOM MOTOR	1	
11(1)		VXW0020	LENS ASSEMBLE	1	
12(1)		VEM0285	AUTO FOCUS MOTOR	1	
13(1)		VXL1635	IRIS UNIT	1	
14(1)		VMX1347	ACTUATER FRAME SEAM	1	
15(1)		VXQ0017	ACTUATER UNIT	1	
16(1)		VDL0143	CRYSTAL FILTER	1	
17(1)		VMX1276	CCD CUSHION	1	
18(1)		VEK3395	CCD UNIT	1	
19(1)		MN3745F	CCD	1	
20(1)		VMA7183	CCD PLATE	1	
21(1)		VWJ0288	CCD FLEXIBLE CABLE	1	
22(1)		VMD1136	SENSOR FLAME	1	
23(1)		VMD1137	SENSOR C.B.A. FLAME	1	
24(1)		VXA3121	SENSOR SHIELD CASE UNIT	1	
25(1)		VMP1447	CAMERA ANGLE	1	
26(1)		VGQ1371	CAMERA ANGLE BOSS	1	
27(1)		VHD0398	SENSOR SETTING SCREW	1	
100(2)		VMD0954	CASSETTE GUIDE (L)	1	
101(2)		VDG0426	MAIN ARM GEAR (A)	1	
102(2)		VMD0953	CASSETTE GUIDE (R)	1	
103(2)		VXA3022	CASSETTE HOLDER UNIT	1	
104(2)		VMD1130	DAMPER UNIT	1	
107(2)		VXA3024	STAND (R) UNIT	1	
108(2)		VEK3414	PHOTO HOLDER (R) UNIT	1	
109(2)		VMB1329	HOLDER SPRING (L)	1	
110(2)		VMB1621	HOLDER SPRING (R)	1	
111(2)		VEK3415	PHOTO HOLDER (L) UNIT	1	
112(2)		VSH0026	LEAF SW	1	<R>
113(2)		VMD0952	LEAF SW COVER (O)	1	
114(2)		VMB1330	LOCK BOARD SPRING	1	
115(2)		VXA3023	STAND (L) UNIT	1	
116(2)		VMB1453	LOCK LEVER (B) SPRING	1	
117(2)		VML1650	LOCK LEVER (B)	1	
118(2)		VDP1096	LOCK ROLLER (O)	1	
119(2)		VXL1648	LOCK BOARD UNIT	1	
120(2)		VMB1331	LOCK LEVER (A) SPRING	1	
121(2)		VML1649	LOCK LEVER (A)	1	
122(2)		VXA3119	CASSETTE UP (O) UNIT	1	
123(2)		VXR0128	SUPPLY REEL TABLE	1	
124(2)		VXP0900	SUPPLY CLUTCH UNIT	1	
125(2)		VXP0901	TAKE-UP CLUTCH UNIT	1	
126(2)		VXR0171	TAKE-UP REEL TABLE	1	
128(2)		VSQ0493	DEW SENSOR UNIT	1	
129(2)		VGQ0888	CASSETTE OPENER	1	
135(2)		VXZ0246	SOFT BRAKE (T) UNIT	1	
136(2)		VXP0899	DRIVE GEAR ARM UNIT	1	
137(2)		VHD0288	CYLINDER UNIT SCREW	2	
138(2)		VEH0366	UPPER CYLINDER UNIT	1	<R>
139(2)		VJR0347	RT TERMINAL	1	
140(2)		VEG0568	CYLINDER UNIT	1	<R>
141(2)		VDV0167	LOADING BELT	1	
142(2)		VDG0370	INTERMEDIATE PULLEY GEAR	1	
143(2)		VMX0653	CUT WASHER	1	
144(2)		VDG0372	DRIVE GEAR (B)	1	
145(2)		VXS0076	EARTH HOLDER UNIT	1	
147(2)		VDG0371	DRIVE GEAR (A)	1	
148(2)		VDG0202	CAM GEAR	1	
149(2)		VMX0388	THRUST WASHER	3	
150(2)		VXL1654	MAIN ROD (K) UNIT	1	
151(2)		VDG0211	LOADING GEAR (C)(2)	1	
152(2)		VMB1324	LOADING GEAR (C) SPRING	1	
153(2)		VDG0210	LOADING GEAR (C)(1)	1	
154(2)		VMA7228	GUARD PLATE	1	
155(2)		VML1707	DRIVE ARMKICK LEVER	1	
156(2)		VMB1388	DRIVE ARMKICK LEVER SPRING	1	
157(2)		VXL1706	SECTOR GEAR UNIT	1	
158(2)		VMA6560	SAFETY TAB SW BASE	1	
159(2)		VSH0023	SAFETY TAB SW	1	<R>
160(2)		VDG0207	DRIVE GEAR (C)	1	
161(2)		VSS0193	MODE SELECT SW	1	<R>
162(2)		VMX1280	SENSOR SPACER	1	
163(2)		VEK3398	STATOR UNIT	1	<R>
164(2)		VXP0634	ROTOR UNIT	1	<R>
165(2)		VXP0897	MAIN PULLEY UNIT	1	
166(2)		VDV0155	CAPSTAN BELT	1	<R>
167(2)		VMD0935	BELT COVER	1	
204(3)		VXP0841	SUPPLY ROLLER POST UNIT	1	
200(3)		VHD0282	P2 ADJUST PLATE SCREW	1	
201(3)		VMA6542	P2 ADJUST PLATE	1	
202(3)		VMD0701	SUPPLY POST STOPPER	1	
203(3)		VMD1166	V STOPPER BASE	1	
204(3)		VXP0841	SUPPLY ROLLER POST UNIT	1	
205(3)		VGQ0842	P2 CAP	1	
206(3)		VMD0769	TAPE PROTECTOR	1	
207(3)		VXA3158	SUPPLY SHAFT HOLDER(1)UNIT	1	
208(3)		VXA3159	SUPPLY SHAFT HOLDER ANGLE UNIT	1	
209(3)		VMM0144	CONNECTION ROD	1	
210(3)		VMX1282	RING GUIDE SLEEVE UNIT	3	
211(3)		VXA2231	CONNECTION TIE UNIT	1	
212(3)		VMB1319	LOADING SPRING	1	
213(3)		VXA2253	LOADING RING (S)(1) UNIT	1	
214(3)		VDP1160	RING GUIDE ROLLER	3	
215(3)		VMB1319	LOADING SPRING	1	
216(3)		VXA2223	LOADING RING (T)(1) UNIT	1	
217(3)		VMC0250	PRESSER SPRING	1	
218(3)		VMX1279	RING GUIDE SLEEVE	3	
219(3)		VMD0721	LOADING GUIDE (S)(1)	1	
220(3)		VMD1128	LOADING GUIDE (S)(2)	1	
221(3)		VMX1088	SUPPLY UPPER LIMITER	1	
222(3)		VMS2888	P1 POST SLEEVE (B)	1	
223(3)		VMX0876	P1 COLLAR	1	
224(3)		VDP1033	P1 ROLLER	1	
225(3)		VMA6547	P1 LIMITER PLATE	1	
226(3)		VMB1327	P1 POST SPRING	1	
227(3)		VXA3112	P1 BASE (1) UNIT	1	
228(3)		VXD0098	THRUST SPACER	1	
229(3)		VHD0204	THRUST SCREW NUT	1	
230(3)		VHD0368	ROLLER POST SCREW	2	
231(3)		VMX0775	DUST SEAL	2	
232(3)		VXD0108	CAPSTAN HOUSING UNIT	1	
233(3)		VXJ0036A	ROLLER POST UNIT	1	
234(3)		VMA6546	TAKE-UP SHAFT HOLDER ANGLE	1	
235(3)		VXA3116	TAKE-UP SHAFT HOLDER (A) UNIT	1	
236(3)		VMD1165	TAKE-UP LOADING BASE	1	
237(3)		VMC0352	SHAFT HOLDER PRESSURE SPRING	1	
238(3)		VMA7226	SHAFT HOLDER PLATE ANGLE	1	
239(3)		VHD0403	V STOPPER SCREW	1	
240(3)		VHD0367	TAKE-UP SHAFT ADJ.SCREW	1	
242(3)		VEM0288	LOADING MOTOR UNIT	1	<R>
243(3)		VJF0444	CLAMPER	1	
245(3)		VMB1747	TENSION SPRING	1	
246(3)		VXL1262	TENSION ARM UNIT	1	
247(3)		VXZ0245	TENSION BAND UNIT	1	
248(3)		VML2065	BAND RELEASE ARM	1	
249(3)		VML1631	TENSION KICK LEVER	1	
250(3)		VML2064	EJECT LEVER (A)	1	
251(3)		VXA3020	SUPPORTER UNIT	1	
252(3)		VMB1405	BRAKE SPRING	1	
253(3)		VXZ0207	BRAKE (R) UNIT	1	
254(3)		VXZ0206	BRAKE (L) UNIT	1	
255(3)		VXA2392	BRAKE PLATE (1) UNIT	1	
256(3)		VML2073	EJECT LEVER (B)	1	

To guarantee the FUNCTION, SAFETY and RELIABLITY of repaired units, only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
257(3)		VED0047	A/C HEAD UNIT	1	<R>
258(3)		VHD0275	A/C HEAD ADJUST SCREW	1	
259(3)		VMB1321	A/C HEAD ADJUST SPRING	1	
260(3)		VHD0381	A/C HEAD TILT ADJUST SCREW	1	
261(3)		VXL1696	A/C HEAD ARM UNIT	1	
262(3)		VJF0300	A/C HEAD BINDER	1	
263(3)		VHN0077	A/C HEAD ARM NUT	1	
264(3)		VMB1320	A/C HEAD SPRING	1	
265(3)		VDG0208	LOADING GEAR (A)	1	
266(3)		VDG0461	LOADING GEAR (B)	1	
267(3)		VHN0072	ADJUST NUT	1	
268(3)		VHN0047	M2 NYLON NUT	2	
269(3)		VMS2693	P4 POST SLEEVE	1	
270(3)		VXJ0057	P5 POST SLEEVE	1	
271(3)		VMB1322	P4,P5 SPRING	2	
272(3)		VML2067	PINCH LEVER	1	
273(3)		VMB1748	PINCH LEVER SPRING	1	
274(3)		VXL1652	PINCH ROLLER ARM(1)UNIT	1	
275(3)		VXL1650	PINCH ARM UNIT	1	
276(3)		VMB1326	PINCH ARM SPRING	1	
277(3)		VXL1264	SOFT BRAKE LEVER (S) UNIT	1	
278(3)		VMB1314	SOFT BRAKE SPRING (S)	1	
279(3)		VMB1771	REW ARM SPRING	1	
280(3)		VXL1649	FF/REW ARM UNIT	1	
282(3)		VBS0021	FE HEAD	1	<R>
283(3)		VMD1129	FE HEAD BASE	1	
284(3)		VMB1447	SUPPORTER SPRING	1	
300(4)		VHD0371	CASSETTE COVER SCREW	2	
301(4)		VYP2055	CASSETTE COVER UNIT	1	NV-M7 E,B,EG,EO,A,EA
301(4)		VYP2056	CASSETTE COVER UNIT	1	NV-M7 EN,EM,AM
302(4)		VYK1783	SIDE CASE (L) UNIT	1	NV-M7 E,B,EG,EO,A,EA
302(4)		VYK1906	SIDE CASE (L) UNIT	1	NV-M7 EN,EM,AM
303(4)		VKM1159	GRIP CASE	1	
304(4)		VYC0215	GRIP BELT UNIT	1	NV-M7 E,B,EG,EO,EM,A, EA
304(4)		VYC0232	GRIP BELT UNIT	1	NV-M7 EN,AM
305(4)		VHD0386	GRIP BELT SCREW	1	
306(4)		VMG0358	SWITCH RUBBER PIECE	2	
307(4)		VGU4001	ZOOM BUTTON	1	
308(4)		VGQ1366	ZOOM BUTTON PIECE	1	
309(4)		VMC0257	EVF SHOE SPRING	1	
310(4)		VMP1073	EVF SHOE	1	
311(4)		VMP1072	EVF ROTATION STAND	1	
312(4)		WW-12	WAVING WASHER	1	
313(4)		VMX1123	EVF ROTATION SPACER	1	
314(4)		VMP1341	EVF ANGLE	1	
315(4)		VGQ1213	EVF ROTATION PIECE (A)	1	
316(4)		VGQ1214	EVF ROTATION PIECE (B)	1	
317(4)		VDB0876	EVF CLICK BALL	1	
318(4)		VMC0277	EVF CLICK SPRING (A)	1	
319(4)		VMC0278	EVF CLICK SPRING (B)	1	
320(4)		VXU0786	OPERATION PANEL UNIT	1	NV-M7 E,B,EG,EA
320(4)		VXU0800	OPERATION PANEL UNIT	1	NV-M7 EO,EN,EM,AM,A
321(4)		VKF0982	RESET LID	1	
322(4)		VKF0983	CURSOR	1	NV-M7 E,B,EG,EA
322(4)		VKF0994	CURSOR	1	NV-M7 EO,EN,EM,AM,A
323(4)		VYK1777	SIDE CASE (R) UNIT	1	NV-M7 E,B,EG,EO,A,EA
323(4)		VYK1778	SIDE CASE (R) UNIT	1	NV-M EN,EM,AM
324(4)		VMC0351	CAMERA OPERATION SWITCH SPRING	1	
325(4)		VGU4008	BACKLIGHT KNOB	2	
326(4)		VGP1783	CAMERA OPERATION PLATE	1	
327(4)		VGU4002	SLIDE KNOB	2	
328(4)		VGP1756	CAMERA OPERATION PANEL	1	
329(4)		VKF0981	HOOD CAP	1	
330(4)		VGQ1350	HOOD STRAP	1	
331(4)		VDW0084	LENS HOOD		
332(4)		VYQ0096	TRIPOD FIXING BRACKET UNIT	1	
333(4)		VSC2179	SHIELD CASE (LID)	1	
334(4)		VYK1965	BATTERY CASE UNIT	1	NV-M7 E,B,EG
334(4)		VYK1787	BATTERY CASE UNIT	1	NV-M7 EO,EN,EA,EM,AM, A

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
335(4)		VMC0238	BATTERY STOPPER FIXING ANGLE	1	
336(4)		VGQ1122	BATTERY STOPPER	1	
337(4)		VGQ1181	BATTERY STOPPER PIECE	1	
338(4)		VGU3906	BATTERY EJECT BUTTON	1	
339(4)		VGQ1129	BATTERY CATCHER	1	
340(4)		VMB1614	BATTERY STOPPER SPRING	1	
341(4)		VKF0831	BATTERY DOOR	1	
342(4)		VMC0237	BATTERY DOOR SPRING	1	
343(4)		VJF0539	BATTERY FIXING PIECE	1	
344(4)		VJR0326	ELECTRODE (+)	1	
345(4)		VMC0363	ELECTRODE (-)	1	
346(4)		VKF0960	BATTERY LID	1	
347(4)		VEJ0631	JACK PLATE UNIT	1	NV-M7 E,B,EG
347(4)		VEJ0610	JACK PLATE UNIT	1	NV-M7 EO,EN,EA,EM,AM A
348(4)		VKM1092	JACK PLATE CASE	1	
349(4)		VGH1382	JACK NAME PLATE	1	
350(4)		VGU3902	EDIT KNOB	1	
351(4)		VXK0860	TOP FRAME UNIT	1	
352(4)		VKM1161	HANDLE TOP CASE	1	
353(4)		VMP1079	SHOE	1	
354(4)		VMC0241	SHOE SPRING	1	
355(4)		VMP1446	SHOULDER BELT ANGE(FRONT)	1	
356(4)		VMP1503	SHOULDER BELT ANGLE(REAR)	1	
357(4)		VMP1462	MIC MOUNT ANGLE	1	
358(4)		VMB1610	BATTERY EJECT SPRING	1	
359(4)		VGU4055	START/STOP BUTTON	1	
360(4)		VGU4056	SUB START/STOP BUTTON	1	
361(4)		VEK3503	MIC UNIT	1	
362(4)		VKM1160	LENS COVER	1	
363(4)		VMP1395	LENS COVER ANGLE	1	
364(4)		VGQ1515	MICROPHONE HOUSING	1	
365(4)		VMP1696	CLAMPER	1	
366(4)		VHD0417	SCREW	2	
400(5)		VKM1144	EVF TOP COVER	1	NV-M7 E,B,EG,EO,A,EA
400(5)		VKM1257	EVF TOP COVER	1	NV-M7 EN,EM,AM
401(5)		VMC0317	EVF ROTATION SPRING	1	
402(5)		VKM1145	EVF BOTTOM COVER	1	
403(5)		VGQ1363	EVF FOOD	1	
404(5)		VKM1147	CRT BOTTOM CASE	1	
405(5)		VGU3895	EYESIGHT CORRECTION KNOB	1	
406(5)		VJF0502	KNOB PRESSURE SHEET	1	
407(5)		VDL0147	MIRROR	1	
408(5)		VDL0139	EYESIGHT CORRECTION LENS	1	
409(5)		VKF0947	LENS HOLDER	1	
410(5)		VKM1146	CRT TOP CASE	1	
411(5)		VMC0316	EYE CAP HOLDER SPRING	1	
412(5)		VKF0978	EYE CAP HOLDER	1	
413(5)		VDL0140	EYE CAP LENS	1	
414(5)		VDG0407	EYE CAP	1	
415(5)		VJF0526	CRT MASKING	1	
416(5)		M01JVV47WB	CRT	1	
417(5)		VMX1004	CRT PROTECTOR RUBBER	1	
418(5)		VJF0527	CRT HOLDER	1	
419(5)		ELY07V552A	DEFLECTION YOKE	1	
420(5)		VHN0093	HOLDER RING	1	
421(5)		VEK3387	EVF CABLE UNIT	1	
422(5)		VMZ1187	BARRIER	1	
450(6)		VQT2453	OPERATING INSTRUCTIONS	1	NV-M7 E/B (ENGLISH/ GERMAN/FRENCH)
450(6)		VQT2461	OPERATING INSTRUCTIONS	1	NV-M7 E(DENISH/DATCH)
450(6)		VQT2458	OPERATING INSTRUCTIONS	1	NV-M7 EO (ENGLISH/ GERMAN/FRENCH)
450(6)		VQT2459	OPERATING INSTRUCTIONS	1	NV-M7 EO (FINNISH/ SWEDISH)
450(6)		VQT2460	OPERATING INSTRUCTIONS	1	NV-M7 EO (ITALY/ SPANISH)
450(6)		VQT2456	OPERATING INSTRUCTIONS	1	NV-M7 EA (ENGLISH)
450(6)		VQT2462	OPERATING INSTRUCTIONS	1	NV-M7 EM (HINDUSTANI /URDU)
450(6)		VQT2463	OPERATING INSTRUCTIONS	1	NV-M7 EM (ENGLISH/ ARABIC)
450(6)		VQT2455	OPERATING INSTRUCTIONS	1	NV-M7 A (ENGLISH)
451(6)		VPN2007	CUSHION (R)	1	NV-M7 E,B,EO,EA,A

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
451(6)		VYQ0115	CUSHION (R) UNIT	1	NV-M7EM
453(6)		VPG3675	PACKING CASE	1	NV-M7 E
453(6)		VPG3676	PACKING CASE	1	NV-M7 B
453(6)		VPG3678	PACKING CASE	1	NV-M7 EO
453(6)		VPG3679	PACKING CASE	1	NV-M7 A
453(6)		VPG3681	PACKING CASE	1	NV-M7 EA
453(6)		VPG3682	PACKING CASE	1	NV-M7 EM
454(6)		VJA0180	RECHARGEABLE BATTERY	1	NV-M7 E,B,EO,EA,EM
			CATCHER		
455(6)		VJA0321	DIN CABLE	1	NV-M7 E,B,EO,EA,EM
457(6)		VFC0130	SHOULDER STRAP	1	NV-M7 E,B,EO,A,EA
457(6)		VFC0131	SHOULDER STRAP	1	NV-M7 EM
458(6)		VSQ0541	AV OUTPUT ADAPTOR	1	NV-M7 E,B,EO
458(6)		VSQ0495	AV OUTPUT ADAPTOR	1	NV-M7 A,EA,EM
460(6)		VPN2059	CUSHION (L)	1	NV-M7 E,B,EO,EA,EM,A
461(6)		VPK0801	ACCESSORY CASE	1	NV-M7 EA
461(6)		VPK0802	ACCESSORY CASE	1	NV-M7 E,EO
461(6)		VPK0803	ACCESSORY CASE	1	NV-M7 EM
461(6)		VPK0804	ACCESSORY CASE	1	NV-M7 A
461(6)		VPK0816	ACCESSORY CASE	1	NV-M7 B
501(7)		VPN2005	CUSHION (TOP)	1	NV-M7 EG,EN
502(7)		VPN2006	CUSHION (BOTTOM)	1	NV-M7 EG,EN
503(7)		VPG3677	PACKING CASE	1	NV-M7 EG
503(7)		VPG3680	PACKING CASE	1	NV-M7 EN
504(7)		VPN2008	ACCESSORY CUSHION (TOP)	1	NV-M7 EG,EN
505(7)		VJA0321	DIN CABLE	1	NV-M7 EG,EN
507(7)		VSQ0541	AV OUTPUT ADAPTOR	1	NV-M7 EG
507(7)		VSQ0495	AV OUTPUT ADAPTOR	1	NV-M7 EN
508(7)		VJA0180	RECHARGEABLE BATTERY	1	NV-M7 EG,EN
			CATCHER		
509(7)		VFC0130	SHOULDER STRAP	1	NV-M7 EG
509(7)		VFC0131	SHOULDER STRAP	1	NV-M7 EN
510(7)		VPN2009	ACCESSORY CUSHION (BOTTOM)	1	NV-M7 EG,EN
511(7)		VPN2021	HANDLE REINFORCEMENT PAD	1	NV-M7 EG,EN
512(7)		VQT2453	OPERATION INSTRUCTIONS	1	NV-M7 EG (ENGLISH/
					/GERMAN/FRENCH)
512(7)		VQT2454	OPERATING INSTRUCTIONS	1	NV-M7 EN (ENGLISH
					/CHINESE)
550(8)		VQT2457	OPERATING INSTRUCTIONS	1	NV-M7 AM (ENGLISH/
					PEKINGESE/TAIWANES)
551(8)		VPK0773	ACCESSORY CASE	1	NV-M7 AM
552(8)		VSQ0495	AV OUTPUT ADAPTOR	1	NV-M7 AM
553(8)		VFC0131	SHOULDER STRAP	1	NV-M7 AM
554(8)		VPN2005	CUSHION (TOP)	1	NV-M7 AM
555(8)		VPN2006	CUSHION (BOTTOM)	1	NV-M7 AM
556(8)		VPG3683	PACKING CASE	1	NV-M7 AM
			FIXTURES & TOOLS		
		VFK0430	FLEXIBLE EXTENSION CABLE	1	
		VFK0380	EXTENTION CABLE	1	
		VFKS0060	EXTENTION CABLE	1	
		VFK0432	HOLDER SPACER (2PCS)	1	
		VFK0431	CAMERA HOLDER ARM	1	
		VFK0382	CAMERA HOLDER	1	
		VFJ8125H3F	VHS-ALIGNMENT TAPE(PAL)	1	
		VFK0144	RETAINING RING REMOVER	1	
			(3mm)		
		VFK0191	POST ADJUSTMENT PLATE	1	
		VFK0190	REEL TABLE HEIGHT GAUGE	1	
		VFK0189	H-POSITION ADJ.-FIXTURE	1	
		VFK0137	POST ADJUSTMENT SCREWDRIVER	1	
		VFK66	FAN TYPE TENSION GAUGE	1	
		VFK0326	HEX WRENCH SET	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VFK0343	CHECK LIGHT	1	
		VFK27	HEAD CLEANING STICK	1	
		MOR265	MORLYTONE GREASE	1	
		VFK0283	SERVICE ALIGNMENT TOOL KIT	1	
		VFK0136	FINE ADJUSTMENT SCREWDRIVER	1	
		VFK0134	ADAPTOR FOR VFK0133	1	
		VFK0133	DIAL TORQUE GAUGE	1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

2.NV-M7E/EG/B/EO/EN/A/EA/EM/AM Electrical Replacement Parts List

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.
3.Unless otherwise specified,
All resistors are in OHMS ,K=1,000 OHMS. All capacitors are in MICRO-FARADS(uf),P=uuF.
4.The P.C.Board units marked width'■'show below the main assembled parts.
5.Printed circuit board assembly with mark(NLA) is no longer available after discontinuation of the product.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CAMERA SECTION		
		VEP23063B	PROCESS C.B.A.	1	
		VEP23068C	SUB PROCESS C.B.A.	1	
		VEP28015E	AUTO FOCUS C.B.A.	1	
		VEP22074A	CDS PACK C.B.A.	1	
		VEP23061B	ENCODER PACK C.B.A.	1	
		VEP22073C	SENSOR C.B.A.	1	
			E.V.F SECTION		
		VEP27033B	E.V.F C.B.A.	1	
			VTR SECTION		
		VEP03482A	MAIN C.B.A.	1	
		VEP06452A	OPERATION C.B.A.	1	
		VEP00K79A	CAMERA OPERATION(I) C.B.A.	1	
		VEK3522	CAMERA OPERATION(I) C.B.A.	1	
		VES0413	MECHANISM CONNECTION C.B.A.	1	
		VEK3415	SUPPLY PHOTO C.B.A.	1	
		VEK3414	TAKE UP PHOTO C.B.A.	1	
		VEK3622	ZOOM SWITCH C.B.A	1	
		VEK3623	START/STOP SWITCH C.B.A.	1	
		VEK3624	SUB START/STOP SW C.B.A.	1	
		VEP00H73B	FE HEAD C.B.A.	1	
		VEK3521	E.V.F CONNECTOR C.B.A.	1	
		VEK3621	14P REMOTE CONTROL C.B.A.	1	NV-M7E/EG/B
		VEK3413	14P REMOTE CONTROL C.B.A.	1	NV-M7EO/EN/EM/EA/A/AM
	■	VEP23063B	PROCESS C.B.A.		
B301		VJS2227	CONNECTOR	1	
B302		VJS1948	CONNECTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CAPACITORS		
C101		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C102		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C103		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C104		ECUX1E473FN	CHIP 25V 0.047U	1	
C105		ECUX1E473FN	CHIP 25V 0.047U	1	
C106		ECUX1E473FN	CHIP 25V 0.047U	1	
C107		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C108		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C109		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C110		ECEA0JKS330I	E.CAPACITOR 6.3V 33U	1	
C111		ECUM1E103ZFM	CHIP 25V 0.01U	1	
C112		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C113		ECUM1E104ZFN	CHIP 25V 0.1U	1	
C114		ECUM1E104ZFN	CHIP 25V 0.1U	1	
C115		ECUM1H821KBV	CHIP 50V 820P	1	
C116		ECUM1H821KBV	CHIP 50V 820P	1	
C117		ECUM1H821KBV	CHIP 50V 820P	1	
C118		ECEA1AKK100	E.CAPACITOR 10V 10U	1	
C119		ECEA1ASN100	E.CAPACITOR 10V 10U	1	
C120		ECEA1ASN100	E.CAPACITOR 10V 10U	1	
C124		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C301		ECUM1E104ZFN	CHIP 25V 0.1U	1	
C302		ECUM1E105JCM	CHIP 25V 1U	1	
C303		ECSF1CE105	TANTALUM 16V 1U	1	
C304		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C305		ECEA1ESN4R7	E.CAPACITOR 25V 4.7U	1	
C306		ECEA1AKK100	E.CAPACITOR 10V 10U	1	
C307		ECEA1VSN2R2	E.CAPACITOR 35V 2.2U	1	
C308		ECUM1E102KBM	CHIP 25V 1000P	1	
C309		ECSF1CE106	TANTALUM 16V 10U	1	
C310		ECUM1E104ZFN	CHIP 25V 0.1U	1	
C311		ECUM1E104ZFN	CHIP 25V 0.1U	1	
C312		ECUM1H560KBM	CHIP 50V 56P	1	
C313		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C314		ECUM1E103ZFM	CHIP 25V 0.01U	1	
C315		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C316		ECEA1CKK100	E.CAPACITOR 16V 10U	1	
C319		ECUM1E473FN	CHIP 25V 0.047U	1	
C320		ECUM1E473FN	CHIP 25V 0.047U	1	
C321		ECUM1E103ZFM	CHIP 25V 0.01U	1	
C322		ECUM1E103ZFM	CHIP 25V 0.01U	1	
C323		ECUM1E473FN	CHIP 25V 0.047U	1	
C324		ECUM1E473FN	CHIP 25V 0.047U	1	
C325		ECUM1E103ZFM	CHIP 25V 0.01U	1	
C326		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C327		ECUM1E104ZFN	CHIP 25V 0.1U	1	
C328		ECUM1E473FN	CHIP 25V 0.047U	1	
C329		ECSF1AE226	T.CAPACITOR 10V 22U	1	
C330		ECSF0JE476	TANTALUM 6.3V 47U	1	
C331		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C335		ECUM1E104ZFN	CHIP 25V 0.1U	1	
C336		ECUM1E104ZFN	CHIP 25V 0.1U	1	
C337		ECUM1E104ZFN	CHIP 25V 0.1U	1	
C338		ECUM1E104ZFN	CHIP 25V 0.1U	1	
C340		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C341		ECEA1EKS100I	E.CAPACITOR 25V 10U	1	
C342		ECSF1AE476	TANTALUM 10V 47U	1	
C344		ECSF1AE106	TANTALUM 10V 10U	1	
C345		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C346		ECUM1E331KBM	CHIP 25V 330P	1	
C347		ECEA1EU101	E.CAPACITOR 25V 100U	1	
C351		ECSF1AE106	TANTALUM 10V 10U	1	
C352		ECUM1E105JCM	CHIP 25V 1U	1	
C353		ECSF1AE106	TANTALUM 10V 10U	1	
C354		ECSF1CE106	TANTALUM 16V 10U	1	
C355		ECST1AY225Z	T.CAPACITOR 10V 2.2U	1	
C356		ECST1AY225Z	T.CAPACITOR 10V 2.2U	1	
C357		ECUM1E104ZFN	CHIP 25V 0.1U	1	
C358		ECUM1E104ZFN	CHIP 25V 0.1U	1	
C359		ECUM1E104ZFN	CHIP 25V 0.1U	1	
C360		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C361		ECUM1E104ZFN	CHIP 25V 0.1U	1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C362		ECUM1E101JCM	CHIP 25V 100P	1	
C363		ECUM1H151JCV	CHIP 50V 150P	1	
C371		ECUM1E103ZFM	CHIP 25V 0.01U	1	
C372		ECUM1E103ZFM	CHIP 25V 0.01U	1	
C376		ECSF1AE685	T.CAPACITOR 10V 6.8U	1	
C377		ECSF1AE685	T.CAPACITOR 10V 6.8U	1	
C378		ECUM1E101JCM	CHIP 25V 100P	1	
C379		ECUM1E101JCM	CHIP 25V 100P	1	
C381		ECUM1E101JCM	CHIP 25V 100P	1	
C382		ECUM1E101JCM	CHIP 25V 100P	1	
C383		ECUM1E101JCM	CHIP 25V 100P	1	
C384		ECUM1E104ZFN	CHIP 25V 0.1U	1	
			DIODES		
D101		MA713	DIODE	1	
D104		MA728	DIODE	1	
D105		MA713	DIODE	1	
D301		MA141WA	DIODE	1	
D302		MA3047M	DIODE	1	
D303		MA728	DIODE	1	
D304		MA141K	DIODE	1	
D305		MA141WK	DIODE	1	
D306		MA141K	DIODE	1	
D308		MA110	DIODE	1	
			FILTERS		
FL301		ELB5B009	FILTER	1	
FL303		ELB4A002	FILTER	1	
FL304		ELB4A002	FILTER	1	
FL305		VLF0610	FILTER	1	
FL306		ELB4E004	FILTER	1	
FL307		ELB4A003	FILTER	1	
FL309		ELB4B003	FILTER	1	
FL310		ELB4B001	FILTER	1	
			CONNECTORS		
FP101		VJS2282	CONNECTOR	1	
FP301		VJS2137	CONNECTOR	1	
			ICS		
IC101		LM2902M	IC	1	
IC102		LM2902M	IC	1	
IC103		AN1358S	IC	1	
IC104		AN1358S	IC	1	
IC301		AN1358S	IC	1	
IC302		AN1358S	IC	1	
IC303		AN1358S	IC	1	
IC304		AN2153S	IC	1	
IC305		MN4052BS	IC	1	
IC306		LM2902M	IC	1	
IC307		UPD9313GB	IC	1	
IC308		VCR0200	IC	1	
IC309		MC08181A	IC	1	
IC310		VCR0199	IC	1	
			COILS		
L301		VLQ0163K150	COIL 15UH	1	
L302		VLQ0163K150	COIL 15UH	1	
L303		VLQ0163K150	COIL 15UH	1	
L304		VLQ0163K150	COIL 15UH	1	
L306		VLQ0163K330	COIL 33UH	1	
L308		VLQ0163K150	COIL 15UH	1	
L311		VLQ0163K150	COIL 15UH	1	
L312		VLQ0163K150	COIL 15UH	1	
L313		VLQ0163K150	COIL 15UH	1	
L315		VLQ0291	COIL	1	
			TRANSISTORS		
Q301		2SD1819	TRANSISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q302		2SD1819	TRANSISTOR	1	
Q303		2SD1819	TRANSISTOR	1	
Q304		2SB1218	TRANSISTOR	1	
Q305		2SB1218	TRANSISTOR	1	
Q306		2SB1218	TRANSISTOR	1	
Q307		2SD1819	TRANSISTOR	1	
Q308		2SB1218	TRANSISTOR	1	
Q311		2SD1819	TRANSISTOR	1	
Q314		2SD1819	TRANSISTOR	1	
Q315		2SD1819	TRANSISTOR	1	
Q316		2SC3931	TRANSISTOR	1	
Q318		2SB1218	TRANSISTOR	1	
Q319		2SB1219	TRANSISTOR	1	
Q320		2SD1819	TRANSISTOR	1	
Q321		2SD1819	TRANSISTOR	1	
Q322		2SB1219	TRANSISTOR	1	
Q323		2SD874	TRANSISTOR	1	
Q324		2SD1819	TRANSISTOR	1	
Q325		2SD1819	TRANSISTOR	1	
Q327		2SD1819	TRANSISTOR	1	
Q328		2SC3931	TRANSISTOR	1	
Q330		2SD1819	TRANSISTOR	1	
Q331		2SB970	TRANSISTOR	1	
Q332		2SD1819	TRANSISTOR	1	
Q339		2SD1819	TRANSISTOR	1	
Q340		2SK316	TRANSISTOR	1	
Q353		2SC3931	TRANSISTOR	1	
			COMBINATION PARTS		
QR302		UN5215	COMBI.PARTS	1	
			RESISTORS		
R101		ERJ3GEYJ561	CHIP 1/20W 560	1	
R102		ERJ3GEYJ561	CHIP 1/20W 560	1	
R103		ERJ3GEYJ682	CHIP 1/20W 6.8K	1	
R104		ERJ3GEYJ153	CHIP 1/20W 15K	1	
R105		ERJ3GEYJ682	CHIP 1/20W 6.8K	1	
R106		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R107		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R109		ERJ3GEYJ153	CHIP 1/20W 15K	1	
R110		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R111		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R112		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R113		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R114		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R116		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R117		ERJ3GEYJ153	CHIP 1/20W 15K	1	
R118		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R119		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R120		ERJ3GEYJ470	CHIP 1/20W 47	1	
R121		ERJ3GEYJ823	CHIP 1/20W 82K	1	
R122		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R123		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R124		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R125		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R126		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R127		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R128		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R129		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R130		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R134		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R157		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R158		ERJ3GEYJ682	CHIP 1/20W 6.8K	1	
R161		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R162		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R167		ERJ3GEYJ392	CHIP 1/20W 3.9K	1	
R168		ERDS2TJ184	C.RESISTOR 1/4W 180K	1	
R198		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R302		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R304		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R306		ERJ3GEYJ823	CHIP 1/20W 82K	1	
R307		ERJ3GEYJ392	CHIP 1/20W 3.9K	1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R308		ERJ3GEYJ274	CHIP 1/20W 270K	1	
R310		ERJ3GEYJ105	CHIP 1/20W 1M	1	
R311		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R312		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R313		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R314		ERJ3GEYJ823	CHIP 1/20W 82K	1	
R315		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R316		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R317		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R318		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R319		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R320		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R321		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R322		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R323		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R324		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R325		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R326		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R327		ERJ3GEYJ154	CHIP 1/20W 150K	1	
R328		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R329		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R330		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R331		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R332		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R333		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R334		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R335		ERJ3GEYJ153	CHIP 1/20W 15K	1	
R336		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R337		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R338		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R339		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R340		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R341		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R342		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R343		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R346		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R347		ERJ3GEYJ393	CHIP 1/20W 39K	1	
R348		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R349		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R350		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R351		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R352		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R353		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R354		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R355		ERJ3GEYJ224	CHIP 1/20W 220K	1	
R356		ERJ3GEYJ824	CHIP 1/20W 820K	1	
R357		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R358		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R359		ERJ3GEYJ153	CHIP 1/20W 15K	1	
R362		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R363		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R366		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R367		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R368		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R369		ERJ3GEYJ124	CHIP 1/20W 120K	1	
R371		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R372		ERJ6GEYJ106	CHIP 1/16W 10M	1	
R373		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R374		ERJ3GEYJ274	CHIP 1/20W 270K	1	
R375		ERJ3GEYJ334	CHIP 1/20W 330K	1	
R376		ERJ3GEYJ105	CHIP 1/20W 1M	1	
R377		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R378		ERJ3GEYJ105	CHIP 1/20W 1M	1	
R379		ERJ3GEYJ334	CHIP 1/20W 330K	1	
R380		ERJ3GEYJ274	CHIP 1/20W 270K	1	
R381		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R382		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R383		ERJ6GEYJ106	CHIP 1/16W 10M	1	
R384		ERJ3GEYJ564	CHIP 1/20W 560K	1	
R385		ERJ3GEYJ154	CHIP 1/20W 150K	1	
R386		ERJ3GEYJ124	CHIP 1/20W 120K	1	
R387		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R388		ERJ3GEYJ124	CHIP 1/20W 120K	1	
R389		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R390		ERJ3GEYJ184	CHIP 1/20W 180K	1	
R391		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R392		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R393		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R394		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R395		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R396		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R397		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R398		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R399		ERJ3GEYJ181	CHIP 1/20W 180	1	
R401		ERJ3GEYJ681	CHIP 1/20W 680	1	
R402		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R404		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R405		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R406		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R407		ERJ6GEYF561	CHIP 1/16W 560	1	
R408		ERJ6GEYF561	CHIP 1/16W 560	1	
R409		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R410		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R411		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R412		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R415		ERJ6GEYF472	CHIP 1/16W 4.7K	1	
R416		ERJ6GEYF472	CHIP 1/16W 4.7K	1	
R417		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R418		ERJ3GEYG682	CHIP 1/20W 6.8K	1	
R419		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R420		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R421		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R422		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R423		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R424		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R425		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R426		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R428		ERJ3GEYJ683	CHIP 1/20W 68K	1	
R429		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R430		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R431		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R432		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R433		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R434		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R435		ERJ3GEYJ153	CHIP 1/20W 15K	1	
R436		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R437		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R438		ERJ3GEYJ561	CHIP 1/20W 560	1	
R439		ERJ3GEYJ392	CHIP 1/20W 3.9K	1	
R440		ERJ3GEYJ331	CHIP 1/20W 330	1	
R441		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R442		ERJ3GEYJ391	CHIP 1/20W 390	1	
R443		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R444		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R445		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R446		ERJ3GEYJ271	CHIP 1/20W 270	1	
R447		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R448		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R449		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R450		ERJ3GEYJ561	CHIP 1/20W 560	1	
R451		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R459		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R460		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R461		ERJ3GEYJ122	CHIP 1/20W 1.2K	1	
R462		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R466		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R467		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R468		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R469		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R471		ERJ3GEYJ392	CHIP 1/20W 3.9K	1	
R472		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R473		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R474		ERJ3GEYJ564	CHIP 1/20W 560K	1	
R476		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R477		ERJ3GEYJ392	CHIP 1/20W 3.9K	1	
R478		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R479		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R480		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R481		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R482		ERJ3GEYJ563	CHIP 1/20W 56K	1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R483		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R485		ERJ3GEYJ122	CHIP 1/20W 1.2K	1	
R485		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R486		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R487		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R490		ERJ6GEY0R00	CHIP 1/16W 0	1	
R496		ERJ3GEYJ473	CHIP 1/20W 47K	1	
			THERMISTORS		
TH101		VRE0023	RESISTOR	1	
TH102		VRE0023	RESISTOR	1	
TH103		VRE0023	RESISTOR	1	
TH104		VRE0023	RESISTOR	1	
TH301		ERTD2FHK802	THERMISTOR	1	
			VARIABLE RESISTORS		
VR101		EVM7YSW00B14	V.RESISTOR 10K	1	
VR102		EVM7YSW00B14	V.RESISTOR 10K	1	
VR103		EVM7YSW00B54	V.RESISTOR 50K	1	
VR104		EVM7YSW00B25	V.RESISTOR 200K	1	
VR105		EVM7YSX00B14	V.RESISTOR 10K	1	
VR106		EVM7YSW00B14	V.RESISTOR 10K	1	
VR107		EVM7YSW00B24	V.RESISTOR	1	
VR302		EVM7YSX00B13	V.RESISTOR 1K	1	
VR303		EVM7YSX00B14	V.RESISTOR 10K	1	
VR304		EVM7YSW00B13	V.RESISTOR 1K	1	
VR305		EVM7YSW00B53	V.RESISTOR	1	
VR306		EVM7YSX00B14	V.RESISTOR 10K	1	
VR308		EVM7YSW00B55	V.RESISTOR 500K	1	
VR310		EVM7YSW00B14	V.RESISTOR 10K	1	
VR312		EVM7YSW00B14	V.RESISTOR 10K	1	
VR313		EVM7YSX00B14	V.RESISTOR 10K	1	
VR314		EVM7YSX00B54	V.RESISTOR 50K	1	
VR315		EVM7YSX00B54	V.RESISTOR 50K	1	
VR316		EVM7YSX00B13	V.RESISTOR 1K	1	
VR317		EVM7YSX00B13	V.RESISTOR 1K	1	
VR318		EVM7YSX00B24	V.RESISTOR 20K	1	
VR319		EVM7YSX00B24	V.RESISTOR 20K	1	
VR322		EVM7YSW00B14	V.RESISTOR 10K	1	
VR323		EVM7YSW00B14	V.RESISTOR 10K	1	
VR324		EVM7YSW00B14	V.RESISTOR 10K	1	
			MISELLENEOUS		
		VWJ0286	FLEXIBLE CABLE	1	
		VSC2207	SYNC SHIELD CASE	1	
		VSC2247	DELAY LINE SHIELD CASE	1	
	■	VEP23068C	SUB PROCESS C.B.A		
			CAPACITORS		
C123		ECSF1CE106	TANTALUM 16V 10U	1	
C125		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C126		ECUM1H101JCV	CHIP 50V 100P	1	
C370		ECUM1E102KBM	CHIP 25V 1000P	1	
C373		ECUM1E101JCM	CHIP 25V 100P	1	
			DIODE		
D102		MA728	DIODE	1	
			FILTER		
FL311		ELB4B002	FILTER	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			IC		
IC105		RC3415M	IC	1	
			CONNECTORS		
P1		VJP1598T	CONNECTOR(MALE) 5P	1	
P2		VJP1597T	CONNECTOR(MALE) 4P	1	
			TRANSISTORS		
Q344		2SB1218	TRANSISTOR	1	
Q345		2SD1819	TRANSISTOR	1	
Q346		2SB1218		1	
Q347		2SB1218		1	
Q348		2SK316	TRANSISTOR	1	
			RESISTORS		
R136		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R137		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R143		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R144		ERJ3GEYJ682	CHIP 1/20W 6.8K	1	
R145		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R146		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R147		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R148		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R149		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R150		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R151		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R152		ERJ3GEYJ102	CHIP 1/20W 1K	1	
			VARIABLE RESISTOR		
VR325		EVM7YSX00B34	V.RESISTOR	1	
	■	VEP28015E	AUTO FOCUS C.B.A.		
			CONNECTOR		
B601		VJP2227	CONNECTOR (MALE)	1	
			CAPACITORS		
C601		ECEA0JU471	E.CAPACITOR 6.3V 470U	1	
C602		ECUX1E270JCM	CHIP 25V 27P	1	
C603		ECUX1E330JCM	CHIP 25V 33P	1	
C604		ECUX1E330JCM	CHIP 25V 33P	1	
C605		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C606		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C607		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C608		ECUX1E101JCM	CHIP 25V 100P	1	
C609		ECUX1E101JCM	CHIP 25V 100P	1	
C610		ECUX1E101JCM	CHIP 25V 100P	1	
C611		ECUX1E101JCM	CHIP 25V 100P	1	
C612		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C613		ECUM1E473KB	CHIP 25V 0.047U	1	
C614		ECUM1E473KB	CHIP 25V 0.047U	1	
C615		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C616		ECEA0JKS101I	E.CAPACITOR 6.3V 100U	1	
C617		ECEA0JKS101I	E.CAPACITOR 6.3V 100U	1	
C618		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C619		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C620		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C621		ECRJA020E12W	TRIMMER	1	
C622		ECUX1H391KBM	CHIP 50V 390P	1	
C623		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C624		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C625		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C626		ECUX1E104ZFN	CHIP 25V 0.1U	1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C627		ECUX1E473FN	CHIP 25V 0.047U	1	
C628		ECUX1E273KBN	CHIP 25V 0.027U	1	
C629		ECUX1E273KBN	CHIP 25V 0.027U	1	
C630		ECUM1E683ZFN	CHIP 25V 0.063U	1	
C631		ECUX1E273KBN	CHIP 25V 0.027U	1	
C632		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C633		ECUX1E223KBN	CHIP 25V 0.023U	1	
C634		ECEA0JSN220	E.CAPACITOR 6.3V 22U	1	
C635		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C636		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C637		ECUX1E473FN	CHIP 25V 0.047U	1	
C638		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C639		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C640		ECUM1H100DCV	CHIP 50V 10P	1	
C641		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C642		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C645		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C646		ECEA1HKS010	E.CAPACITOR 50V 1U	1	
C648		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C649		ECUM1H333KB	CHIP 50V 0.033U	1	
C650		ECUM1H333KB	CHIP 50V 0.033U	1	
C651		ECUX1E103ZFM	CHIP 50V 0.01U	1	
C652		ECEA0JKS101I	E.CAPACITOR 6.3V 100U	1	
C653		ECEA1CU100	E.CAPACITOR 16V 10U	1	
C654		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C655		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C656		ECRJA020E12X	TRIMMER	1	
C657		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C658		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C659		ECUX1E220JCM	CHIP 25V 22P	1	
C660		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C661		ECUX1H391KBM	CHIP 50V 390P	1	
C663		ECUX1E102JCM	CHIP 25V 1000P	1	
			DIODES		
D602		MA110	DIODE	1	
D603		MA110	DIODE	1	
D604		1SS250	DIODE	1	
D605		1SS250	DIODE	1	
D606		MA110	DIODE	1	
D607		MA110	DIODE	1	
D608		MA110	DIODE	1	
D610		MA153	DIODE	1	
			FILTERS		
FL601		ELB4B004	FILTER	1	
FL602		VLF0595	FILTER	1	
FL603		ELB4B005	FILTER	1	
FL604		ELB4D001	FILTER	1	
FL605		VLF0596	FILTER	1	
			ICS		
IC601		MN15865VYV	IC	1	
IC602		AN2583S	IC	1	
IC603		AN78N05	IC	1	
IC604		NJM4558M-P	IC	1	
IC605		AN6562S	IC	1	
IC606		NJM3415M	IC	1	
IC607		MN1280Q	IC	1	
			COILS		
L602		VLQ0163K330	COIL 33UH	1	
L603		VLQEL05F101K	COIL 100UH	1	
			CONNECTOR		
P601		VJP1599T	CONNECTOR(MALE) 6P	1	
			TRANSISTORS		
Q601		2SD1819	TRANSISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q602		2SD1819	TRANSISTOR	1	
Q603		2SB710	TRANSISTOR CHIP	1	
Q604		2SB1219		1	
Q605		2SD1820		1	
Q606		2SB1219		1	
Q607		2SD1820		1	
Q608		2SD1819	TRANSISTOR	1	
Q609		2SD1819	TRANSISTOR	1	
Q610		2SD1819	TRANSISTOR	1	
Q611		2SD1819	TRANSISTOR	1	
Q612		2SD1819	TRANSISTOR	1	
Q613		2SA1255	TRANSISTOR	1	
Q614		2SC3138	TRANSISTOR	1	
Q615		2SD1819	TRANSISTOR	1	
Q616		2SB1220	TRANSISTOR	1	
Q617		2SB1220	TRANSISTOR	1	
Q618		2SD1819	TRANSISTOR	1	
Q619		2SD1819	TRANSISTOR	1	
Q620		2SD1819	TRANSISTOR	1	
Q621		2SD1819	TRANSISTOR	1	
			RESISTORS		
R602		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R603		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R604		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R605		ERJ3GEYJ683	CHIP 1/20W 68K	1	
R606		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R607		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R608		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R609		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R610		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R611		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R612		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R613		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R614		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R615		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R616		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R617		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R618		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R619		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R620		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R621		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R622		ERJ3GEYJ271	CHIP 1/20W 270	1	
R623		ERJ3GEYJ122	CHIP 1/20W 1.2K	1	
R624		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R625		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R626		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R627		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R628		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R629		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R630		ERJ3GEYJ751	CHIP 1/20W 750	1	
R631		ERJ3GEYJ331	CHIP 1/20W 330	1	
R632		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R633		ERJ3GEYJ224	CHIP 1/20W 220K	1	
R634		ERJ3GEYJ224	CHIP 1/20W 220K	1	
R635		ERJ3GEYJ224	CHIP 1/20W 220K	1	
R636		ERJ3GEYJ224	CHIP 1/20W 220K	1	
R637		ERJ3GEYJ394	CHIP 1/20W 390K	1	
R638		ERJ6GEYF333	CHIP 1/16W 33K	1	
R639		ERJ6GEYF473	CHIP 1/16W 47K	1	
R640		ERJ3GEYJ394	CHIP 1/20W 390K	1	
R641		ERJ6GEYF333	CHIP 1/16W 33K	1	
R642		ERJ6GEYF473	CHIP 1/16W 47K	1	
R643		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R644		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R645		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R646		ERJ3GEYJ224	CHIP 1/20W 220K	1	
R647		ERJ3GEYJ124	CHIP 1/20W 120K	1	
R648		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R649		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R650		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R651		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R652		ERJ3GEYJ153	CHIP 1/20W 15K	1	

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Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R653		ERJ3GEYJ682	CHIP 1/20W 6.8K	1	
R654		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R655		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R656		ERJ3GEYJ220	CHIP 1/20W 22	1	
R657		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R658		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R659		ERJ3GEYJ105	CHIP 1/20W 1M	1	
R660		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R661		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R662		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R663		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R664		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R665		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R666		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R667		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R668		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R669		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R670		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R671		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R672		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R673		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R674		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R675		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R676		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R677		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R678		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R679		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R680		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R681		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R682		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R683		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R684		ERJ3GEYJ681	CHIP 1/20W 680	1	
R685		ERJ3GEYJ105	CHIP 1/20W 1M	1	
R686		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R687		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R688		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R689		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R690		ERJ3GEYJ393	CHIP 1/20W 39K	1	
R691		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R692		ERJ3GEYJ100	CHIP 1/20W 10	1	
R693		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R694		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R695		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R696		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R697		ERJ3GEYJ394	CHIP 1/20W 390K	1	
R698		ERJ3GEYJ474	CHIP 1/20W 470K	1	
R699		ERJ3GEYJ220	CHIP 1/20W 22	1	
R800		ERJ3GEYJ221	CHIP 1/20W 220	1	
R801		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R804		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R805		ERJ3GEYJ101	CHIP 1/20W 100	1	
			TRANSFORMAR		
T601		ETE13K43AY	TRANSFORMAR	1	
			VARIABLE RESISTORS		
VR601		EVML1GA00B53	V.RESISTOR 5K	1	
VR602		EVML1GA00B15	V.RESISTOR 100K	1	
VR603		EVM7YSX00B14	V.RESISTOR 10K	1	
			CRYSTAL OSCILLATOR		
X601		VSX0196	CRYSTAL OSCILLATOR	1	
	■	VEP22074A	CDS PACK C.B.A		
			CAPACITORS		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C501		ECUX1E180JCM	CHIP 25V 18P	1	
C502		ECUX1E473FN	CHIP 25V 0.047U	1	
C503		ECUX1E180JCM	CHIP 25V 18P	1	
C504		ECST1DC685Z	T.CAPACITOR 20V 6.8U	1	
C506		ECUX1E180JCM	CHIP 25V 18P	1	
C507		ECST1AC106Z	T.CAPACITOR 10V 10U	1	
			IC		
IC501		AN2010S	IC	1	
			CONNECTOR		
PK501		VJR0365	CONNECTOR	1	
			RESISTORS		
R501		ERJ3GEYJ102	CHIP 1/20W 1K	1	
	■	VEP23061B	ENCODER PACK C.B.A.		
			CAPACITORS		
C901		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C903		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C904		ECST1AC106Z	T.CAPACITOR 10V 10U	1	
C905		ECUX1E330JCM	CHIP 25V 33P	1	
C906		ECUX1E102KBM	CHIP 25V 1000P	1	
C907		ECUX1E102KBM	CHIP 25V 1000P	1	
C908		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C909		ECST1AC106Z	T.CAPACITOR 10V 10U	1	
C910		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C911		ECUM1C224ZFN	CHIP 16V 0.22U	1	
C912		ECUX1H103ZFN	CHIP 50V 0.01U	1	
			IC		
IC901		AN2253FA	IC	1	
L901		VLQ0163K330	COIL 33UH	1	
			CONNECTOR		
PK901		VJR0367	CONNECTOR	1	
PK902		VJR0367	CONNECTOR	1	
			TRANSISTORS		
Q901		2SA1532	TRANSISTOR	1	
Q902		2SB1218		1	
			RESISTORS		
R901		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R902		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R903		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R904		ERJ3GEYJ274	CHIP 1/20W 270K	1	
R907		ERJ3GEYJ393	CHIP 1/20W 39K	1	
R908		ERJ3GEYJ153	CHIP 1/20W 15K	1	
R909		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R910		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R911		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R912		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R913		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R914		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R915		ERJ3GEYJ560	CHIP 1/20W 56	1	

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Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R916		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R917		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R918		ERJ3GEYG112	CHIP 1/20W 1.1K	1	
R919		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R921		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R923		ERJ3GEYJ102	CHIP 1/20W 1K	1	
	■	VEP22073C	SENSOR C.B.A.		
B201		VJP1948	CONNECTOR (MALE)	1	
			CAPACITORS		
C201		ECSF1AE476	TANTALUM 10V 47U	1	
C202		ECUX1E105JCM	CHIP 25V 1U	1	
C203		ECUX1E105JCM	CHIP 25V 1U	1	
C204		ECUX1H390JCM	CHIP 50V 39P	1	
C206		ECRLC010A12V	TRIMMER	1	
C207		ECSF1AE106	TANTALUM 10V 10U	1	
C208		ECEA0JKS220	E.CAPACITOR 6.3V 22U	1	
C209		ECSF1CE336	TANTALUM 16V 33U	1	
C210		ECEA1HKS010	E.CAPACITOR 50V 1U	1	
C211		ECUM1E104MD	CHIP 25V 0.1U	1	
C212		ECSF1EE106	T.CAPACITOR 25V 10U	1	
C213		ECUX1E473FN	CHIP 25V 0.047U	1	
C214		ECEA1HKS010	E.CAPACITOR 50V 1U	1	
C215		ECUX1E270JCM	CHIP 25V 27P	1	
C216		ECUX1E270JCM	CHIP 25V 27P	1	
C217		ECSF1EE475	TANTALUM 25V 4.7U	1	
C218		ECUX1E270JCM	CHIP 25V 27P	1	
C219		ECUX1E270JCM	CHIP 25V 27P	1	
C220		ECSF1CE476	TANTALUM 16V 47U	1	
C221		ECUX1E270JCM	CHIP 25V 27P	1	
C222		ECUX1E270JCM	CHIP 25V 27P	1	
C223		ECUM1H682KBV	CHIP 50V 0.068U	1	
C224		ECUX1E473FN	CHIP 25V 0.047U	1	
C225		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C226		ECSF1VE475	T.CAPACITOR 35V 4.7U	1	
C227		ECSF1AE106	TANTALUM 10V 10U	1	
C228		ECSF1EE106	T.CAPACITOR 25V 10U	1	
C229		ECSF0JE476	TANTALUM 6.3V 47U	1	
C230		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C231		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C232		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C233		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C236		ECUX1E105JCM	CHIP 25V 1U	1	
C237		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C238		ECUX1E330JCM	CHIP 25V 33P	1	
C239		ECUX1E330JCM	CHIP 25V 33P	1	
C240		ECUX1E330JCM	CHIP 25V 33P	1	
C241		ECUX1E101JCM	CHIP 25V 100P	1	
C242		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C243		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C244		ECUX1E473FN	CHIP 25V 0.047U	1	
C245		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C246		ECUX1E105JCM	CHIP 25V 1U	1	
C247		ECEA1CKK100	E.CAPACITOR 16V 10U	1	
C248		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C249		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C250		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C251		ECUX1E330JCM	CHIP 25V 33P	1	
C252		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C501		ECUX1E180JCM	CHIP 25V 18P	1	
C502		ECUX1E473FN	CHIP 25V 0.047U	1	
C503		ECUX1E180JCM	CHIP 25V 18P	1	
C504		ECST1DC685Z	T.CAPACITOR 20V 6.8U	1	
C506		ECUX1E180JCM	CHIP 25V 18P	1	
C507		ECST1AC106Z	T.CAPACITOR 10V 10U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			DIODS		
D202		MA141A	DIODE	1	
D204		MA110	DIODE	1	
D205		MA110	DIODE	1	
D207		MA159	DIODE	1	
D209		MA110	DIODE	1	
D210		MA141K	DIODE	1	
FL201		ELB5B010	FILTER	1	
FP201		VJS2125	CONNECTOR	1	
IC201		MN53015XBM	IC	1	
IC202		UPD6147G	IC	1	
IC501		AN2010S	IC	1	
L201		VLQ0163K150	COIL 15UH	1	
L202		VLQ0187K150	COIL 15UH	1	
L203		VLQ0187K150	COIL 15UH	1	
L204		VLQ0163K150	COIL 15UH	1	
L205		VLQ0163K150	COIL 15UH	1	
L206		VLQ0163K150	COIL 15UH	1	
L207		VLQ0187K150	COIL 15UH	1	
L210		VLQ0291	COIL	1	
L211		VLQ0291	COIL	1	
L212		VLQ0291	COIL	1	
PK501		VJR0365	CONNECTOR	1	
Q201		2SD1819	TRANSISTOR	1	
Q202		2SD1819	TRANSISTOR	1	
Q203		2SD1819	TRANSISTOR	1	
Q204		2SC3930	TRANSISTOR	1	
Q205		2SA1610	TRANSISTOR	1	
Q206		2SC4176	TRANSISTOR	1	
Q207		2SA1610	TRANSISTOR	1	
Q208		2SC4176	TRANSISTOR	1	
Q209		2SA1610	TRANSISTOR	1	
Q210		2SC4176	TRANSISTOR	1	
Q211		2SC3930	TRANSISTOR	1	
			RESISTORS		
R201		ERJ3GEYJ331	CHIP 1/20W 330	1	
R202		ERJ3GEYJ331	CHIP 1/20W 330	1	
R203		ERJ3GEYJ105	CHIP 1/20W 1M	1	
R204		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R205		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R206		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R207		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R208		ERJ3GEYJ471	CHIP 1/20W 470	1	
R209		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R210		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R211		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R212		ERJ3GEYJ330	CHIP 1/20W 33	1	
R213		ERJ3GEYJ681	CHIP 1/20W 680	1	
R214		ERJ3GEYJ681	CHIP 1/20W 680	1	
R215		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R216		ERJ6GEYJ103	CHIP 1/16W 10K	1	
R217		ERJ3GEYJ101	CHIP 1/20W 100	1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R218		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R219		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R220		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R221		ERJ3GEYJ101	CHIP 1/20W 100	1	
R222		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R223		ERJ3GEYJ331	CHIP 1/20W 330	1	
R224		ERJ3GEYJ331	CHIP 1/20W 330	1	
R225		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R226		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R227		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R228		ERJ3GEYJ221	CHIP 1/20W 220	1	
R229		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R230		ERJ3GEYJ105	CHIP 1/20W 1M	1	
R231		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R232		ERJ3GEYJ101	CHIP 1/20W 100	1	
R233		ERJ3GEYJ101	CHIP 1/20W 100	1	
R234		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R235		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R236		ERJ3GEYJ270	CHIP 1/20W 27	1	
R501		ERJ3GEYJ102	CHIP 1/20W 1K	1	
VR201		EVM7YSX00B25	V.RESISTOR 200K	1	
VR202		EVM7YSW00B54	V.RESISTOR 50K	1	
X201		VSX0240	CRISTAL OSCILLATOR	1	
	■	VEP27033B	EVF C.B.A.		
			CAPACITORS		
C701		ECEA0JKS101I	E.CAPACITOR 6.3V 100U	1	
C702		ECSE1CY684V	T.CAPACITOR 16V 0.68U	1	
C703		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C704		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C705		ECEA0JK221	E.CAPACITOR 6.3V 220U	1	
C706		ECUX1H681KN	CHIP 50V 680P	1	
C707		ECUM1C2242FN	CHIP 16V 0.22U	1	
C708		ECUX1E223KBN	CHIP 25V 0.023U	1	
C709		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C710		ECUM1H152JN	CHIP 50V 1500P	1	
C711		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C712		ECEA1AF470	E.CAPACITOR 10V 47U	1	
C713		ECEA0JK221	E.CAPACITOR 6.3V 220U	1	
C714		ECQK1392JZ	P.CAPACITOR 100V 3900P	1	
C715		ECEA1CKS220I	E.CAPACITOR 16V 22U	1	
C716		ECUX1H181KN	CHIP 50V 180P	1	
C717		ECEA1HKS4R7	E.CAPACITOR 50V 4.7U	1	
C718		VCK0057K121	C.CAPACITOR 120P	1	
C719		VCK0058K331	C.CAPACITOR 330P	1	
C720		ECUX1H473ZFN	CHIP 50V 0.047U	1	
C721		ECUX1H473ZFN	CHIP 50V 0.047U	1	
C722		ECUX1H104ZFN	CHIP 50V 0.1U	1	
D701		MA151K	DIODE	1	
D702		ERA91-02	DIODE	1	
D703		ERA34-10	DIODE	1	
IC701		AN2510S	IC	1	
L701		ELC04D002	COIL	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L702		ELH5L313	COIL	1	
P701		VJP1233T	CONNECTOR	1	
P702		VJP1231T	CONNECTOR(MALE) 4P	1	
Q701		2SB709	TRANSISTOR CHIP	1	
Q702		2SD968A	TRANSISTOR	1	
Q703		2SA1022	TRANSISTOR	1	
			RESISTORS		
R701		ERJ6GEYK6R8	CHIP 1/10W 6.8	1	
R702		ERJ6GEYG682	CHIP 1/16W 6.8K	1	
R703		ERJ6GEYJ392	CHIP 1/16W 3.9K	1	
R704		ERJ6GEYJ182	CHIP 1/16W 1.8K	1	
R705		ERJ6GEYK4R7	CHIP 1/16W 4.7	1	
R706		ERJ6GEYJ150	CHIP 1/16W 15	1	
R707		ERJ6GEYJ151	CHIP 1/16W 150	1	
R708		ERJ6GEYJ102	CHIP 1/16W 1K	1	
R709		ERJ6GEYJ163	CHIP 1/16W 16K	1	
R710		ERJ6GEYJ561	CHIP 1/16W 560	1	
R711		ERJ6GEYJ102	CHIP 1/16W 1K	1	
R712		ERJ6GEYJ124	CHIP 1/16W 120K	1	
R713		ERJ6GEYJ222	CHIP 1/16W 2.2K	1	
R714		ERJ6GEYJ682	CHIP 1/16W 6.8K	1	
R715		ERJ6GEYJ102	CHIP 1/16W 1K	1	
R716		ERJ6GEYJ102	CHIP 1/16W 1K	1	
R717		ERJ6GEYJ561	CHIP 1/16W 560	1	
R718		ERJ6GEYJ222	CHIP 1/16W 2.2K	1	
R719		ERJ8GCJ222V	CHIP 1/8W 2.2K	1	
R720		ERJ6GEYJ274	CHIP 1/16W 270K	1	
R721		ERJ6GEYJ223	CHIP 1/16W 22K	1	
R722		ERJ6GEYJ682	CHIP 1/16W 6.8K	1	
R723		ERJ6GEYJ102	CHIP 1/16W 1K	1	
R724		ERJ6GEYJ105	CHIP 1/16W 1M	1	
R726		ERJ6GEYK225	CHIP 1/16W 2.2M	1	
R727		ERJ6GEYK185	CHIP 1/16W 1.8M	1	
R728		ERJ6GEYK335	CHIP 1/16W 3.3M	1	
R729		ERJ6GEYK125	CHIP 1/16W 1.2M	1	
R730		ERJ8GCYJ821		1	
T701		ETF14L26A	FLYBACK TRANS.	1	
TH701		VRT0012	THERMISTER	1	
VR701		VRV0079B221K	V.RESISTOR	1	
VR702		VRV0079B222K	V.RESISTOR	1	
VR704		VRV0027B225K	V.RESISTOR	1	
VR705		VRV0027B105K	V.RESISTOR	1	
	■	VEP03482A	MAIN C.B.A.		
			CAPACITORS		
C1001		ECUX1H820JCM	CHIP 50V 82P	1	
C1002		ECUX1H560KBM	CHIP 50V 56P	1	
C1003		ECUX1H471KBM	CHIP 50V 470P	1	
C1004		ECUX1C105ZF	CHIP 16V 1U	1	
C1005		ECUX1E473FN	CHIP 25V 0.047U	1	

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Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C1006		ECUX1E473FN	CHIP 25V 0.047U	1	
C1007		ECEA1EU101	E.CAPACITOR 25V 100U	1	
C1008		ECUX1C105ZF	CHIP 16V 1U	1	
C1009		ECUX1C105ZF	CHIP 16V 1U	1	
C1010		ECEA1EU101	E.CAPACITOR 25V 100U	1	
C1011		ECUX1E473FN	CHIP 25V 0.047U	1	
C1012		ECEA0JKJ221	CHIP 6.3V 220P	1	
C1013		ECUX1E223ZFN	CHIP 25V 0.022U	1	
C1014		ECUX1E223ZFN	CHIP 25V 0.022U	1	
C1015		ECEA1AKJ221	E.CAPACITOR 10V 220U	1	
C1016		ECEA0JKJ221	E.CAPACITOR 6.3V 220U	1	
C1019		ECEA1AKJ221	E.CAPACITOR 10V 220U	1	
C1020		ECEA1CKAJ101	E.CAPACITOR 16V 100U	1	
C1021		ECEA1CKAJ101	E.CAPACITOR 16V 100U	1	
C1026		ECUX1H153KBN	CHIP 50V 0.015U	1	
C1027		ECUX1H681JN	CHIP 50V 680P	1	
C1028		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C1029		ECEA1CKA220	E.CAPACITOR 16V 22U	1	
C1030		ECEA1AKA330	E.CAPACITOR 10V 33U	1	
C1031		ECEA1AKA330	E.CAPACITOR 10V 33U	1	
C1032		ECUX1H102KBN	CHIP 50V 1000P	1	
C1033		ECEA1CKK100	E.CAPACITOR 16V 10U	1	
C1034		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C1035		ECEA0JKJ221	E.CAPACITOR 6.3V 220U	1	
C1040		ECUX1E223ZFN	CHIP 25V 0.022U	1	
C1041		ECEA1AK101	E.CAPACITOR 10V 100U	1	
C1042		VCYD1C104MR1	S.CAPACITOR 16V 0.1U	1	
C2001		ECUX1E101JCM	CHIP 25V 100P	1	
C2002		ECUX1E101JCM	CHIP 25V 100P	1	
C2003		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C2004		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C2005		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C2006		ECUX1E473FN	CHIP 25V 0.047U	1	
C2007		ECUX1H472ZFM	CHIP 25V 470P	1	
C2009		ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C2010		ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C2011		ECUX1E473FN	CHIP 25V 0.047U	1	
C2012		ECUX1E222KBM	CHIP 25V 2200P	1	
C2013		ECUX1E102KBM	CHIP 25V 1000P	1	
C2014		ECEA1VKN2R2	E.CAPACITOR 35V 2.2U	1	
C2015		ECUX1C105ZF	CHIP 16V 1U	1	
C2016		ECUX1C105ZF	CHIP 16V 1U	1	
C2017		ECUX1E102KBM	CHIP 25V 1000P	1	
C2018		ECUX1E102KBM	CHIP 25V 1000P	1	
C2019		ECEA0GK470	E.CAPACITOR 4V 47U	1	
C2020		ECUX1H471KBM	CHIP 50V 470P	1	
C2021		ECUX1C105ZF	CHIP 16V 1U	1	
C2022		ECUX1C105ZF	CHIP 16V 1U	1	
C2023		ECUX1E333ZFN	CHIP 25V 0.033U	1	
C2024		ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C2025		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C2026		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C2027		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C2028		ECUX1C105ZF	CHIP 16V 1U	1	
C2029		ECUX1E102KBM	CHIP 25V 1000P	1	
C2030		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C2032		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C2033		ECUX1C105ZF	CHIP 16V 1U	1	
C2034		ECUX1E101JCM	CHIP 25V 100P	1	
C2035		ECUX1E102KBM	CHIP 25V 1000P	1	
C2036		ECUX1C105ZF	CHIP 16V 1U	1	
C2037		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C2038		ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C2039		ECEA0GK101	E.CAPACITOR 4V 100U	1	
C2040		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C2041		ECUX1C105ZF	CHIP 16V 1U	1	
C2042		ECEA0JKA470	CHIP 6.3V 47U	1	
C2043		ECEA1CKK100	E.CAPACITOR 16V 10U	1	
C2044		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C2045		ECQV1H393JZ	P.CAPACITOR 50V 0.039U	1	
C2046		ECUX1E333ZFN	CHIP 25V 0.033U	1	
C2047		ECUX1E333ZFN	CHIP 25V 0.033U	1	
C2048		ECUX1E333ZFN	CHIP 25V 0.033U	1	
C2049		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C2050		ECUX1C105ZF	CHIP 16V 1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C2051		ECEA0GK470	E.CAPACITOR 4V 47U	1	
C2053		ECEA0JK101	E.CAPACITOR 6.3V 100U	1	
C2054		ECUX1H333ZFN	CHIP 50V 0.033U	1	
C2055		ECEA0JKA470	E.CAPACITOR 6.3V 1U	1	
C2056		ECEA1EKK010	E.CAPACITOR 25V 1U	1	
C2057		ECEA1EKK010	E.CAPACITOR 25V 1U	1	
C2058		ECEA1EKK010	E.CAPACITOR 25V 1U	1	
C2059		ECUX1H472ZFM	CHIP 50V 4700P	1	
C2060		ECUX1H472ZFM	CHIP 50V 4700P	1	
C2061		ECUX1H472ZFM	CHIP 50V 4700P	1	
C2062		ECEA1AKA470	E.CAPACITOR 10V 47U	1	
C2063		ECEA1CKA470	E.CAPACITOR 10V 47U	1	
C2064		ECEA1CKA470	E.CAPACITOR 10V 47U	1	
C2065		ECEA1EKK2R2	E.CAPACITOR 25V 2.2U	1	
C2066		ECEA1EKK2R2	E.CAPACITOR 25V 2.2U	1	
C2067		ECEA1EKK2R2	E.CAPACITOR 25V 2.2U	1	
C2068		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C2069		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C2070		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C2072		ECUM1C474ZFM	CHIP 16V 0.47U	1	
C2073		ECUM1C474ZFM	CHIP 16V 0.47U	1	
C2074		ECUX1E105JCM	CHIP 25V 1U	1	
C2075		ECUX1E105JCM	CHIP 25V 1U	1	
C2076		ECUX1C105ZF	CHIP 25V 1U	1	
C2077		ECUX1E103ZFM	CHIP 16V 1U	1	
C2078		ECUX1H473ZFN	CHIP 50V 0.047U	1	
C2079		ECUX1H560JCM	CHIP 50V 56P	1	
C2081		ECEA0GK470	E.CAPACITOR 4V 47U	1	
C2082		VCYD1C103MR1	S.CAPACITOR 16V 0.01U	1	
C3001		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C3002		ECEA1EKK3R3	E.CAPACITOR 25V 3.3U	1	
C3005		ECEA1AK470	E.CAPACITOR 10V 47U	1	
C3007		ECUX1E223ZFN	CHIP 25V 0.022U	1	
C3007		ECUX1H223ZFN	CHIP 50V 0.022U	1	
C3010		ECEA0JK221	E.CAPACITOR 6.3V 220U	1	
C3011		ECEA0JK221	E.CAPACITOR 6.3V 220U	1	
C3012		ECUX1E220JCM	CHIP 25V 22P	1	
C3013		ECUX1E122KBM	CHIP 25V 1200P	1	
C3014		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C3015		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C3016		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C3017		ECEA1EKK4R7	E.CAPACITOR 25V 4.7U	1	
C3018		ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C3019		ECEA1EKK2R2	E.CAPACITOR 25V 2.2U	1	
C3020		ECEA1EKK3R3	E.CAPACITOR 25V 3.3U	1	
C3021		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C3022		ECUX1E330JCM	CHIP 25V 33P	1	
C3024		ECUX1C105ZF	CHIP 16V 1U	1	
C3025		ECUX1H471KBM	CHIP 50V 470P	1	
C3026		ECUX1E271KBM	CHIP 25V 270P	1	
C3027		ECUM1H221JCV	CHIP 50V 220P	1	
C3028		ECEA1HKK0R1	E.CAPACITOR 50V 0.1U	1	
C3029		ECUX1H820JCM	CHIP 50V 82P	1	
C3030		ECUX1H390JCM	CHIP 50V 39P	1	
C3032		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C3033		ECEA0JU221	E.CAPACITOR 6.3V 220U	1	
C3034		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C3045		ECUX1H680JCM	CHIP 50V 68P	1	
C3047		ECUX1H560JCM	CHIP 50V 56P	1	
C3049		ECUM1H821KBV	CHIP 50V 820P	1	
C3050		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C3051		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C3052		ECUX1E103KBM	CHIP 25V 0.01U	1	
C3053		ECEA1HKK010	E.CAPACITOR 50V 1U	1	
C3054		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C3055		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C3056		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C3057		ECUX1E101JCM	CHIP 25V 100P	1	
C3058		ECUX1E103ZFM	CHIP 25V 0.01U	1	
C3059		ECUX1H470JCM	CHIP 50V 47U	1	
C3060		ECUX1E100CCM		1	
C3061		ECUX1E103ZFM		1	
C3062		ECUX1E103ZFM		1	
C3063		ECEA1EKK3R3	E.CAPACITOR 25V 3.3U	1	
C3064		ECUX1E103ZFM		1	

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Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C3065		ECUX1E103ZFM		1	
C3066		ECEA0JU221	E.CAPACITOR 6.3V 220U	1	
C3068		ECUX1E103ZFM		1	
C3070		ECUX1H680JCM		1	
C3071		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C3074		ECUX1E103ZFM		1	
C3075		ECUX1E103ZFM		1	
C3076		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C3077		ECEA1CKK100	E.CAPACITOR 16V 10U	1	
C3080		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C3085		ECUX1E151JVM		1	
C3086		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C3087		ECUX1H681KBM		1	
C3098		ECCF1H040CC	C.CAPACITOR 50V 4P	1	
C3100		ECUX1E270JCM		1	
C3103		ECEA1EKK3R3	E.CAPACITOR 25V 3.3U	1	
C3110		ECKF1H103ZF	C.CAPACITOR 50V 0.01U	1	
C3111		ECCF1H101JC	C.CAPACITOR 50V 100P	1	
C3113		ECCF1H470JC	C.CAPACITOR 50V 47P	1	
C3114		ECCF1H820JC	C.CAPACITOR 50V 82P	1	
C3501		ECUX1E103ZFM		1	
C3502		ECUX1E103ZFM		1	
C3503		ECUX1E102JCM		1	
C3504		ECUX1E151JVM		1	
C3505		ECUX1H390JCM		1	
C3506		ECUX1E103ZFM		1	
C3507		ECUX1E103ZFM		1	
C3508		ECQV1H394JZ	P.CAPACITOR 50V 0.39U	1	
C4001		ECQP1222JZ	P.CAPACITOR 100V 2200P	1	
C4002		ECRHC120N11	TRIMER	1	
C4003		ECUX1H562KBN	CHIP 50V 5600P	1	
C4004		ECUX1H472KBM		1	
C4005		ECUX1E122KBM		1	
C4007		ECEA1HKL010	E.CAPACITOR 50V 1U	1	
C4008		ECUX1H333ZFN	CHIP 50V 0.033U	1	
C4009		ECEAJKA330		1	
C4011		ECUX1E822KBM		1	
C4012		ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C4013		ECEA1HKK010	E.CAPACITOR 50V 1U	1	
C4014		ECUX1E182KBM		1	
C4015		ECEA0JKA470		1	
C4016		ECEA1CKA470		1	
C4017		ECEA1CKA220		1	
C4018		ECEAJKA330		1	
C4019		ECEA1HKK010	E.CAPACITOR 50V 1U	1	
C4021		ECUX1H333ZFN	CHIP 50V 0.033U	1	
C4024		ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C4025		ECEA1CKA220		1	
C4026		ECEA0JK220	E.CAPACITOR 6.3V 22U	1	
C4027		ECUX1H682KBN	CHIP 50V 6800P	1	
C4028		ECEA1EKK2R2	E.CAPACITOR 25V 2.2U	1	
C4029		ECUX1E222KBM		1	
C4030		ECEA1AK101	E.CAPACITOR 10V 100U	1	
C4031		ECUX1E103ZFM		1	
C4032		ECEA1HKN010	E.CAPACITOR 50V 1U	1	
C4033		ECEA0GK470	E.CAPACITOR 4V 47U	1	
C4034		ECEA0JKA101		1	
C4036		ECEA0JKA101		1	
C4037		ECEA1EKK4R7	E.CAPACITOR 25V 4.7U	1	
C4038		ECEA1AKA330		1	
C4039		ECEA1EKK2R2	E.CAPACITOR 25V 2.2U	1	
C4040		ECKF1H151KB	C.CAPACITOR 50V 150P	1	
C5001		ECUX1H473ZFN	CHIP 50V 0.047U	1	
C5002		ECSF1VE105		1	
C5003		ECUX1H473ZFN	CHIP 50V 0.047U	1	
C5004		ECSF1VE105		1	
C5005		ECUX1H473ZFN	CHIP 50V 0.047U	1	
C5006		ECSF1VE105		1	
C5007		ECUX1H473ZFN	CHIP 50V 0.047U	1	
C5008		ECSF1VE105		1	
C5009		ECUX1C105ZF		1	
C5010		ECUX1E103ZFM		1	
C5011		ECUX1E103ZFM		1	
C5012		ECUX1C105ZF		1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C5013		ECUX1C105ZF		1	
C5014		ECUX1E103ZFM		1	
C5015		ECUX1E103ZFM		1	
C5016		ECUX1C105ZF		1	
C5017		ECUX1E101JCM		1	
C5018		ECUX1E101JCM		1	
C5019		ECUX1E101JCM		1	
C5020		ECUX1E101JCM		1	
C5021		ECUX1C105ZF		1	
C5022		ECUX1E151JVM		1	
C5023		ECUX1E270JCM		1	
C5024		ECEB0JU101	E.CAPACITOR 6.3V 100U	1	
C5025		ECUX1E103ZFM		1	
C5026		ECUX1H820JCM		1	
C5030		ECUX1E330JCM		1	
C5032		ECUX1E103ZFM		1	
C5033		ECUX1E332KBM		1	
C5034		ECEA0JKA470		1	
C5035		ECUX1E103ZFM		1	
C5036		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C5037		ECEA0JKA470		1	
C5038		ECUX1E103ZFM		1	
C5039		ECEA1CKK100	E.CAPACITOR 16V 10U	1	
C5040		ECUX1E103ZFM		1	
C5041		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C5047		ECUX1H473ZFN	CHIP 50V 0.047U	1	
C5048		ECUX1H473ZFN	CHIP 50V 0.047U	1	
C5049		ECUX1H473ZFN	CHIP 50V 0.047U	1	
C5050		ECUX1H473ZFN	CHIP 50V 0.047U	1	
C6001		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C6002		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C6003		ECEA1EKK3R3	E.CAPACITOR 25V 3.3U	1	
C6004		ECEA1CKK100	E.CAPACITOR 16V 10U	1	
C6005		ECUX1E220JCM		1	
C6006		ECUX1E105JCM		1	
C6007		ECUX1E105JCM		1	
C6008		ECUX1C105ZF		1	
C6009		ECUX1E103ZFM		1	
C6010		ECUX1E103ZFM		1	
C6011		ECUX1E103ZFM		1	
C6012		ECUX1E103ZFM		1	
C6013		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C6014		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C6015		ECUX1E103ZFM		1	
C6016		ECUM1H102ZFV	CHIP 50V 1000P	1	
C6017		ECUM1H102ZFV	CHIP 50V 1000P	1	
C6018		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C6019		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C6020		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C6021		ECEA1EU470	E.CAPACITOR 25V 47U	1	
C6022		ECUX1H562ZFM		1	
C6025		ECEA1EKK010	E.CAPACITOR 25V 1U	1	
C6026		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C6027		VCYD1C104MR1	S.CAPACITOR 16V 0.1U	1	
C6028		ECEA0JKK100	E.CAPACITOR 6.3V 10U	1	
C6029		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C6029		VCYD1C104MR1	S.CAPACITOR 16V 0.1U	1	
C6031		MA141A		1	
C6033		ECKF1H391KB	C.CAPACITOR 50V 390P	1	
C8001		ECUM1H103ZFM	CHIP 50V 0.01U	1	
C8002		ECUM1H121JCM	CHIP 50V 120P	1	
C8003		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8005		ECUX1E103ZFM		1	
C8006		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8009		ECUX1H472ZFM		1	
C8010		ECUX1H470JCM		1	
C8011		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8012		ECUX1E103KBM		1	
C8013		ECQB1H223JZ	P.CAPACITOR 50V 0.022U	1	
C8014		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C8015		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8016		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C8017		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8018		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8019		ECUX1H103ZFN	CHIP 50V 0.01U	1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C8020		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8021		ECUX1E103ZFM		1	
C8022		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8023		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8024		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8025		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8026		ECUX1C105ZF		1	
C8027		ECEA0GK470	E.CAPACITOR 4V 47U	1	
C8028		ECUM1H030CCV	CHIP 50V 3P	1	
C8029		ECUX1E102KBM		1	
C8030		ECEA0JU221	E.CAPACITOR 6.3V 220U	1	
C8031		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8032		ECEA0JKA470		1	
C8033		ECUX1E104ZFN	CHIP 25V 0.1U	1	
C8034		ECUX1E102KBM		1	
C8035		ECEA1CKK100	E.CAPACITOR 16V 10U	1	
C8036		ECEA1EKK2R2	E.CAPACITOR 25V 2.2U	1	
C8037		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8038		ECUX1H680JCM		1	
C8039		ECUX1E103ZFM		1	
C8040		ECUX1H473ZFN	CHIP 50V 0.047U	1	
C8043		ECUX1E331KBM		1	
C8044		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C8045		ECUX1E103ZFM		1	
C8046		ECUX1E103ZFM		1	
C8050		ECUX1H560KBM		1	
C8051		ECEA1CKK100	E.CAPACITOR 16V 10U	1	
C8052		ECKF1H681KB	C.CAPACITOR 50V 680P	1	
D1001		MA141WK	DIODE	1	
D1003		MA159A		1	
D1004		MA3075H		1	
D2001		DA204U		1	
D2002		DA204U		1	
D2003		DA204U		1	
D2005		MA121		1	
D2008		MA141K	DIODE	1	
D2009		DAN202U		1	
D2010		DAN202U		1	
D2011		DAN202U		1	
D2012		MA141K	DIODE	1	
D2013		MA141K	DIODE	1	
D3002		DAN202U		1	
D3003		MA141K	DIODE	1	
D3005		1SS283	DIODE	1	
D4001		DAN202U		1	
D4002		MA141K	DIODE	1	
D4004		MA141K	DIODE	1	
D6003		DAP202U		1	
D6004		MA159A		1	
D6006		MA141K	DIODE	1	
D6007		MA141K	DIODE	1	
D6008		MA141K	DIODE	1	
D6010		MA141K	DIODE	1	
D6012		DAN202U		1	
D6013		DAP202U		1	
D6014		DAP202U		1	
D6015		DAP202U		1	
D6016		DAP202U		1	
D6017		DAP202U		1	
D6018		DAN202U		1	
D6019		MA141WK	DIODE	1	
D6023		MA141WA		1	
D6025		MA141WK	DIODE	1	
D6026		MA141K	DIODE	1	
D6034		MA165	DIODE	1	OR 1SS119, 1SS254
D8001		MA141A		1	
D8002		MA141K	DIODE	1	
DL3001		EFDCD124A13A	DELAY LINE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
F1001		VSF0059	FUSE	1	
FL3001		ELB4C005	FILTER	1	
FL3003		VLF0599	FILTER	1	
FL3004		VLF0599	FILTER	1	
FL3005		VLF0593		1	
FL5001		VLF0625	FILTER	1	
FL5002		VLF0593		1	
FL8001		ELB4B010	FILTER	1	
FL8002		ELB4B025	FILTER	1	
FL8003		VLF0626	FILTER	1	
IC1001		BA6149LS	IC	1	
IC1002		UN102	IC	1	
IC1003		UPC358G2		1	
IC1004		UPC393G2		1	
IC2001		MN67461VDJF	IC	1	
IC2002		AN3798S		1	
IC2005		BA6430S	IC	1	
IC2006		TA8402F		1	
IC2007		MN1551VYJS		1	
IC3001		AN3215S	IC	1	
IC3002		AN3321S	IC	1	
IC4001		UPC1513G		1	
IC4002		UPC2300G		1	
IC4003		M5201L	IC	1	
IC5001		AN3311S	IC	1	
IC6001		MN15361VYF		1	
IC6002		S6700A		1	
IC6003		AN6914S	IC	1	
IC6004		M54543L	IC	1	
IC6005		UPD4094BG		1	
IC8001		AN6367S	IC	1	
IC8002		MN6163AS	IC	1	
L1001		ELC07D003		1	
L1002		ELC08D038		1	
L1003		ELC06D005	COIL	1	
L1004		ELC07D003		1	
L1005		ELC08D027		1	
L1006		ELC07D003		1	
L1007		ELC08D025		1	
L1008		VLQ0129	COIL 300UH	1	
L1011		VLQEL05F221K	COIL 220UH	1	
L1012		VLQEL05F221K	COIL 220UH	1	
L1013		VLQEL05F101K	COIL 100UH	1	
L3001		VLQEL05F101K	COIL 100UH	1	
L3002		VLQEL05F101K	COIL 100UH	1	
L3004		VLQEL05F101K	COIL 100UH	1	
L3005		VLQEL05F101K	COIL 100UH	1	
L3007		VLQ0187K180	COIL 180UH	1	
L3008		VLQEL04F820K		1	
L3012		VLQEL04F180K	COIL	1	
L3013		VLQEL05F101K	COIL 100UH	1	
L3015		VLQ0187K180	COIL 180UH	1	
L3501		VLQEL04F100K		1	
L3502		VLQEL04F120K		1	
L4001		VLQEL05F221K	COIL 220UH	1	
L4002		ELTMR822JB	TRANSFORMER	1	
L4003		ELTMR153KB	TRANSFORMER	1	
L5001		VLQEL04F180K	COIL	1	
L5002		VLQ0163K330	COIL 33UH	1	
L5003		VLQEL04F150K		1	
L5006		VLQEL04F220K		1	
L5007		VLQEL05F101K	COIL 100UH	1	
L5008		VLQEL05F101K	COIL 100UH	1	
L5009		VLQEL05F681K	COIL 680UH	1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L5010		VLQEL05F101K	COIL 100UH	1	
L5013		VLQEL05F101K	COIL 100UH	1	
L5015		VLQEL05F151K	COIL 150UH	1	
L6001		VLQEL05F101K	COIL 100UH	1	
L8001		VLQEL05F101K	COIL 100UH	1	
L8002		VLQEL04F470K	COIL	1	
L8004		VLQ0187K150	COIL 15UH	1	
L8006		VLQ0163J121		1	
L8009		VLQEL04F101K		1	
P1001		VJP1230T	CONNECTOR(MALE) 3P	1	
P1003		VJP1229T	CONNECTOR(MALE) 2P	1	
P2001		VJS2120	CONNECTOR	1	
P2002		VJP1923T	CONNECTOR	1	
P2003		VJP1595T	CONNECTOR(MALE) 2P	1	
P3002		VJP1598T	CONNECTOR(MALE) 5P	1	
P3003		VJS2119	CONNECTOR	1	
P3004		VJP1601T	CONNECTOR(MALE) 8P	1	
P3005		VJP1595T	CONNECTOR(MALE) 2P	1	
P4001		VJP1596T	CONNECTOR(MALE) 3P	1	
P4002		VJP1598T	CONNECTOR(MALE) 5P	1	
P4003		VJP1595T	CONNECTOR(MALE) 2P	1	
P4004		VJP1595R	CONNECTOR(MALE) 2P	1	
P4005		VJP1595T	CONNECTOR(MALE) 2P	1	
P5001		VJS2117	CONNECTOR	1	
P6002		VJP1605T	CONNECTOR(MALE) 12P	1	
P6003		VJS2107	CONNECTOR	1	
P6004		VJP1229T	CONNECTOR(MALE) 2P	1	
P6005		VJP1595T	CONNECTOR(MALE) 2P	1	
P6006		VJP1596T	CONNECTOR(MALE) 3P	1	
P6007		VJP1598T	CONNECTOR(MALE) 5P	1	
P6009		VJP1597T	CONNECTOR(MALE) 4P	1	
P6010		VJP1599T	CONNECTOR(MALE) 6P	1	
P6011		VJR0365	CONNECTOR	1	
P6012		VJP1229T	CONNECTOR(MALE) 2P	1	
P6013		VJP1595R	CONNECTOR(MALE) 2P	1	
Q1001		2SB1218		1	
Q1002		2SB956		1	
Q1003		2SD1293M		1	
Q1004		2SD1328	TRANSISTOR CHIP	1	
Q1005		2SD1328	TRANSISTOR CHIP	1	
Q2001		2SB956		1	
Q2002		2SB956		1	
Q2003		2SB956		1	
Q3001		XN1401		1	
Q3006		2SC3938		1	
Q3007		2SC3938		1	
Q3018		XN4601		1	
Q3019		XN4601		1	
Q3021		2SC3931		1	
Q3024		2SB1218		1	
Q3025		2SB970	TRANSISTOR CHIP	1	
Q3026		2SB970	TRANSISTOR CHIP	1	
Q3036		2SC3931		1	
Q3037		2SB1218		1	
Q3038		2SD1820		1	
Q3501		2SA812		1	
Q3502		2SA1175		1	
Q3503		2SD1819	TRANSISTOR	1	
Q4001		2SD1820		1	
Q4002		2SD1328	TRANSISTOR CHIP	1	
Q4003		2SD1819		1	
Q4005		2SB1219		1	
Q4007		2SD1823		1	
Q4008		2SD1819		1	
Q4009		2SD1819		1	
Q5001		XN1401		1	
Q5002		XN1501		1	
Q5003		XN1501		1	
Q5007		XN1401		1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q5008		XN1501		1	
Q5009		XN1501		1	
Q5013		2SC3931		1	
Q5014		2SD1819		1	
Q5015		2SC3931		1	
Q5018		2SD1819	TRANSISTOR	1	
Q6001		2SB1218		1	
Q6002		2SB779		1	
Q6003		2SB779		1	
Q6004		2SD1820		1	
Q6005		2SD1819		1	
Q8001		2SC3931		1	
Q8002		2SD1819		1	
Q8004		2SB1218		1	
Q8005		2SC3931		1	
Q8006		2SC3931		1	
Q8007		2SD1819		1	
Q8010		2SD1819		1	
Q8011		XN1401		1	
Q8012		2SB1218		1	
Q8013		2SC3931		1	
Q8014		2SD1819	TRANSISTOR	1	
QR1001		GA1L4M		1	
QR1002		UN2213	TRANSISTOR-RESISTOR	1	
QR2004		GA1L4M		1	
QR2005		UN5117		1	
QR3001		UN5112		1	
QR3006		GA1F4M		1	
QR3007		XN1212		1	
QR3013		XN1215		1	
QR3019		UN5112		1	
QR3027		UN5217		1	
QR3030		2SD1819		1	
QR3035		UN5213		1	
QR4002		GA1F4M		1	
QR4003		UN5112		1	
QR4004		GA1L4M		1	
QR5001		XN1213		1	
QR5002		XN1112		1	
QR5003		XN1213		1	
QR5004		XN1112		1	
QR5008		GA1L4M		1	
QR6003		GA1L4M		1	
QR6004		XN1213		1	
QR6009		GA1L4M		1	
QR6010		GA1L4M		1	
QR6011		GN1L4M		1	
QR6012		GA1L4M		1	
QR6013		GN1A4Z		1	
QR6014		GN1A4Z		1	
QR6015		GN1A4Z		1	
QR6016		GN1L4M		1	
QR6017		GN1A4Z		1	
QR6018		GN1A4Z		1	
QR6019		GA1L4M		1	
QR6023		GN1A4Z		1	
QR6024		GA1L4M		1	
QR6025		GA1L4M		1	
QR6026		GN1L4M		1	
QR6027		UN5213		1	
QR6028		UN5213		1	
QR6033		UN5213		1	
QR6035		UN5113		1	
QR6036		UN5213		1	
QR6037		XN4316	COMBI.PARTS	1	
QR8001		UN5112		1	
QR8003		GA1F4M		1	
QR8004		XN4215		1	
QR8005		UN5112		1	
QR8006		UN5217		1	
QR8007		GA1L4M		1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			RESISTORS		
R1001		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R1002		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R1003		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R1004		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R1005		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R1006		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R1007		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R1008		ERJ3GEYJ334	CHIP 1/20W 330K	1	
R1009		ERJ3GEYJ154	CHIP 1/20W 150K	1	
R1012		ERJ8GCYJ122	CHIP 1/8W 1.2K	1	
R1013		ERJ8GCYJ122	CHIP 1/8W 1.2K	1	
R1014		ERJ8GCYJ152		1	
R1015		ERJ8GCYJ152		1	
R1018		ERJ8GCYJ122	CHIP 1/8W 1.2K	1	
R1019		ERJ8GCYJ821		1	
R1020		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R1021		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R1022		ERJ3GEYJ681	CHIP 1/20W 680	1	
R1023		ERJ3GEYJ681	CHIP 1/20W 680	1	
R1024		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R1025		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R1026		ERJ3GEYJ391	CHIP 1/20W 390	1	
R1027		ERJ3GEYJ391	CHIP 1/20W 390	1	
R1028		ERJ3GEYJ391	CHIP 1/20W 390	1	
R1029		ERJ3GEYJ391	CHIP 1/20W 390	1	
R1030		ERJ3GEYJ391	CHIP 1/20W 390	1	
R1031		ERJ3GEYJ391	CHIP 1/20W 390	1	
R1032		ERJ3GEYJ821	CHIP 1/20W 820	1	
R1033		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R1035		ERJ3GEYJ105	CHIP 1/20W 1M	1	
R1036		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R1037		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R1038		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R1039		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R1040		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R1041		ERJ3GEYJ101	CHIP 1/20W 100	1	
R1042		ERJ3GEYJ823	CHIP 1/20W 82K	1	
R1043		ERJ3GEYJ153	CHIP 1/20W 15K	1	
R1044		ERJ8GCYJ560		1	
R1045		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R1046		ERJ3GEYJ684	CHIP 1/20W 680K	1	
R1047		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R1048		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R1049		VSF0015A10	FUSE	1	
R1050		VSF0015A08	IC PROTECTOR	1	
R1051		VSF0059	FUSE	1	
R2001		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R2002		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R2003		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R2004		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R2005		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R2006		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R2007		ERJ3GEYJ154	CHIP 1/20W 150K	1	
R2009		ERJ3GEYJ154	CHIP 1/20W 150K	1	
R2010		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R2011		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R2012		ERJ3GEYJ274	CHIP 1/20W 270K	1	
R2013		ERJ3GEYJ154	CHIP 1/20W 150K	1	
R2014		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R2015		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R2017		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R2018		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R2019		ERJ3GEYJ105	CHIP 1/20W 1M	1	
R2020		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R2022		ERJ3GEYJ271	CHIP 1/20W 270	1	
R2025		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R2028		ERJ3GEYJ105	CHIP 1/20W 1M	1	
R2029		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R2030		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R2031		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R2032		ERJ3GEYJ274	CHIP 1/20W 270K	1	
R2034		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R2036		ERJ3GEYJ330	CHIP 1/20W 33	1	
R2037		ERJ3GEYJ330	CHIP 1/20W 33	1	
R2038		ERDS2TJR68	C.RESISTOR 1/4W 0.68	1	
R2039		ERJ3GEYJ330	CHIP 1/20W 33	1	
R2040		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R2041		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R2042		ERJ3GEYJ683	CHIP 1/20W 68K	1	
R2043		ERJ3GEYJ221	CHIP 1/20W 220	1	
R2044		ERJ3GEYJ820	CHIP 1/20W 82	1	
R2045		ERJ8GCYK2R2		1	
R2046		ERJ8GCYK1R8		1	
R2047		ERJ8GCYK1R8		1	
R2048		ERJ3GEYJ153	CHIP 1/20W 15K	1	
R2049		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R2050		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R2051		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R2053		ERJ3GEYJ682	CHIP 1/20W 6.8K	1	
R2054		ERJ3GEYJ682	CHIP 1/20W 6.8K	1	
R2060		ERJ3GEYJ334	CHIP 1/20W 330K	1	
R2062		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R2064		ERDS2TJ101	C.RESISTOR 1/4W 100	1	
R2066		ERJ6GMYJ221		1	
R2067		ERJ6GMYJ150		1	
R2068		ERJ6GMYJ150		1	
R2069		ERJ6GMYJ150		1	
R2070		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R2071		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R2072		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R2077		ERJ3GEYJ392	CHIP 1/20W 3.9K	1	
R2079		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R2080		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R2084		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R2085		ERDS2TJ104	C.RESISTOR 1/4W 100K	1	
R3001		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R3002		ERJ3GEYJ271	CHIP 1/20W 270	1	
R3003		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R3004		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R3008		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R3013		ERJ3GEYJ331	CHIP 1/20W 330	1	
R3014		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R3015		ERJ3GEYJ682	CHIP 1/20W 6.8K	1	
R3016		ERJ3GEYJ681	CHIP 1/20W 680	1	
R3017		ERJ3GEYJ560	CHIP 1/20W 56	1	
R3018		ERJ3GEYJ221	CHIP 1/20W 220	1	
R3020		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R3021		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R3022		ERJ3GEYJ270	CHIP 1/20W 27	1	
R3023		ERJ3GEYJ270	CHIP 1/20W 27	1	
R3024		ERJ3GEYJ680	CHIP 1/20W 68	1	
R3025		ERJ3GEYJ220	CHIP 1/20W 22	1	
R3026		ERJ3GEYJ821	CHIP 1/20W 820	1	
R3027		ERJ3GEYJ821	CHIP 1/20W 820	1	
R3028		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R3029		ERJ3GEYJ681	CHIP 1/20W 680	1	
R3030		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R3031		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R3032		ERJ3GEYJ391	CHIP 1/20W 390	1	
R3033		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R3036		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R3039		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R3040		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R3041		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R3042		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R3043		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R3044		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R3045		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R3046		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R3047		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R3048		ERJ3GEYJ474	CHIP 1/20W 470K	1	
R3049		ERJ3GEYJ394	CHIP 1/20W 390K	1	
R3050		ERJ3GEYJ821	CHIP 1/20W 820	1	
R3051		ERJ3GEYJ221	CHIP 1/20W 220	1	
R3054		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R3055		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R3056		ERJ3GEYJ103	CHIP 1/20W 10K	1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R3057		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R3058		ERJ3GEYJ122	CHIP 1/20W 1.2K	1	
R3059		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R3061		ERJ3GEYJ331	CHIP 1/20W 330	1	
R3063		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R3067		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R3068		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R3076		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R3078		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R3079		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R3082		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R3087		ERJ3GEYJ391	CHIP 1/20W 390	1	
R3089		ERJ3GEYJ122	CHIP 1/20W 1.2K	1	
R3090		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R3091		ERJ3GEYJ122	CHIP 1/20W 1.2K	1	
R3093		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R3094		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R3097		ERJ3GEYJ391	CHIP 1/20W 390	1	
R3109		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R3120		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R3121		ERJ3GEYJ151	CHIP 1/20W 150	1	
R3122		ERJ3GEYJ471	CHIP 1/20W 470	1	
R3124		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R3125		ERJ3GEYJ121	CHIP 1/20W 120	1	
R3145		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R3146		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R3147		ERJ3GEYJ681	CHIP 1/20W 680	1	
R3148		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R3154		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R3155		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R3501		ERJ3GEYJ393	CHIP 1/20W 39K	1	
R3502		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R3503		ERJ3GEYJ391	CHIP 1/20W 390	1	
R3504		ERJ3GEYJ271	CHIP 1/20W 270	1	
R3505		ERJ3GEYJ4R7	CHIP 1/20W 4.7	1	
R3506		ERJ3GEYJ823	CHIP 1/20W 82K	1	
R4001		ERJ3GEYJ100	CHIP 1/20W 10	1	
R4002		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R4003		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R4004		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R4005		ERJ3GEYJ151	CHIP 1/20W 150	1	
R4006		ERJ3GEYJ184	CHIP 1/20W 180K	1	
R4007		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R4009		ERJ3GEYJ122	CHIP 1/20W 1.2K	1	
R4010		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R4011		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R4012		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R4013		ERJ3GEYJ153	CHIP 1/20W 15K	1	
R4014		ERJ3GEYJ122	CHIP 1/20W 1.2K	1	
R4016		ERJ3GEYJ181	CHIP 1/20W 180	1	
R4018		ERJ3GEYJ105	CHIP 1/20W 1M	1	
R4025		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R4026		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R4027		ERJ3GEYJ561	CHIP 1/20W 560	1	
R4029		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R4030		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R4031		ERJ3GEYJ124	CHIP 1/20W 120K	1	
R4032		ERJ3GEYJ124	CHIP 1/20W 120K	1	
R4033		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R4034		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R4035		ERJ3GEYJ101	CHIP 1/20W 100	1	
R4036		ERJ3GEYJ154	CHIP 1/20W 150K	1	
R4037		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R4038		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R4039		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R4040		ERJ3GEYJ681	CHIP 1/20W 680	1	
R4041		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R4042		ERJ6GMYJ103		1	
R4044		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R4045		ERJ3GEYJ224	CHIP 1/20W 220K	1	
R4046		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R4047		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R4048		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R4049		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R4050		ERJ3GEYJ122	CHIP 1/20W 1.2K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R4051		ERJ3GEYJ122	CHIP 1/20W 1.2K	1	
R4052		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R4053		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R4054		ERJ3GEYJ153	CHIP 1/20W 15K	1	
R5001		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R5002		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R5003		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R5004		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R5005		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R5006		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R5007		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R5008		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R5009		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R5010		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R5011		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R5012		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R5013		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R5014		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R5015		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R5016		ERJ6GMYJ102	CHIP 1/16W 1K	1	
R5017		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R5018		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R5019		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R5020		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R5021		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R5022		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R5023		ERJ6GMYJ102	CHIP 1/16W 1K	1	
R5024		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R5025		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R5026		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R5027		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R5028		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R5029		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R5030		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R5031		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R5032		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R5033		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R5034		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R5035		ERJ3GEYJ681	CHIP 1/20W 680	1	
R5036		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R5037		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R5040		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R5041		ERJ3GEYJ681	CHIP 1/20W 680	1	
R5042		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R5043		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R5044		ERJ3GEYJ121	CHIP 1/20W 120	1	
R5045		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R5049		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R5050		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R5053		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R5054		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R5055		ERJ3GEYJ121	CHIP 1/20W 120	1	
R5056		ERJ3GEYJ471	CHIP 1/20W 470	1	
R5057		ERJ3GEYJ471	CHIP 1/20W 470	1	
R5058		ERJ3GEYJ471	CHIP 1/20W 470	1	
R5059		ERJ3GEYJ471	CHIP 1/20W 470	1	
R5063		ERJ3GEYJ100	CHIP 1/20W 10	1	
R6004		ERJ3GEYJ332	CHIP 1/20W 3.3K	1	
R6005		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R6006		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R6007		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R6008		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R6009		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R6010		ERJ3GEYJ393	CHIP 1/20W 39K	1	
R6011		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R6014		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R6015		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R6017		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R6018		ERJ8GCYJ391		1	
R6019		ERJ8GCYJ391		1	
R6020		ERJ8GCYJ391		1	
R6021		ERJ8GCYJ391		1	
R6022		ERJ8GCYJ391		1	
R6023		ERJ6GMYJ391	CHIP 1/16W 390	1	
R6024		ERJ8GCYJ391		1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R6025		ERJ8GCYJ391		1	
R6026		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R6027		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R6028		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R6029		ERJ3GEYJ184	CHIP 1/20W 180K	1	
R6030		ERJ3GEYJ474	CHIP 1/20W 470K	1	
R6031		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R6032		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R6033		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R6034		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R6035		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R6036		ERJ3GEYJ564	CHIP 1/20W 560K	1	
R6037		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R6038		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R6039		ERJ3GEYJ334	CHIP 1/20W 330K	1	
R6040		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R6041		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R6042		ERJ8GCYJ391		1	
R6043		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R6044		ERJ8GCYJ391		1	
R6045		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R6046		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R6047		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R6048		ERJ3GEYJ184	CHIP 1/20W 180K	1	
R6049		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R6050		ERJ3GEYJ184	CHIP 1/20W 180K	1	
R6051		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R6053		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R6054		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R6055		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R6056		ERJ8GCYJ221	CHIP 1/8W 220	1	
R6057		ERJ8GCYJ221	CHIP 1/8W 220	1	
R6058		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R6059		ERJ3GEYJ224	CHIP 1/20W 220K	1	
R6060		ERJ3GEYJ224	CHIP 1/20W 220K	1	
R6061		ERJ3GEYJ393	CHIP 1/20W 39K	1	
R6062		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R6063		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R6064		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R6066		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R6067		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R6068		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R6069		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R6070		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R6071		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R6072		ERJ3GEYJ184	CHIP 1/20W 180K	1	
R6073		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R6074		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R6077		ERJ3GEYJ152	CHIP 1/20W 1.5K	1	
R6079		ERJ3GEYJ473	CHIP 1/20W 47K	1	
R6082		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R6084		ERDS2TJ473	C.RESISTOR 1/4W 47K	1	
R8002		ERJ3GEYJ681	CHIP 1/20W 680	1	
R8003		ERJ3GEYJ122	CHIP 1/20W 1.2K	1	
R8004		ERJ3GEYJ271	CHIP 1/20W 270	1	
R8005		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R8006		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R8007		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R8008		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R8009		ERJ3GEYJ222	CHIP 1/20W 2.2K	1	
R8011		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R8012		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R8013		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R8014		ERJ3GEYJ333	CHIP 1/20W 33K	1	
R8015		ERJ3GEYJ682	CHIP 1/20W 6.8K	1	
R8016		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R8017		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R8018		ERJ3GEYJ390	CHIP 1/20W 39	1	
R8019		ERJ3GEYJ331	CHIP 1/20W 330	1	
R8020		ERJ3GEYJ821	CHIP 1/20W 820	1	
R8021		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R8022		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R8023		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R8024		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R8025		ERJ3GEYJ102	CHIP 1/20W 1K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R8026		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R8027		ERJ3GEYJ182	CHIP 1/20W 1.8K	1	
R8028		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R8029		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R8030		ERJ8GCYJ470	CHIP 1/8W 47	1	
R8031		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R8032		ERJ3GEYJ273	CHIP 1/20W 27K	1	
R8033		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R8034		ERJ3GEYJ821	CHIP 1/20W 820	1	
R8035		ERJ3GEYJ272	CHIP 1/20W 2.7K	1	
R8036		ERJ3GEYJ223	CHIP 1/20W 22K	1	
R8037		ERJ3GEYJ183	CHIP 1/20W 18K	1	
R8038		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R8040		ERJ3GEYJ822	CHIP 1/20W 8.2K	1	
R8041		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R8042		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R8043		ERJ3GEYJ104	CHIP 1/20W 100K	1	
R8046		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R8047		ERJ3GEYJ562	CHIP 1/20W 5.6K	1	
R8048		ERJ3GEYJ105	CHIP 1/20W 1M	1	
R8054		ERJ3GEYJ472	CHIP 1/20W 4.7K	1	
R8055		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R8056		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R8060		ERJ3GEYJ681	CHIP 1/20W 680	1	
R8061		ERJ3GEYJ471	CHIP 1/20W 470	1	
R8062		ERJ3GEYJ101	CHIP 1/20W 100	1	
R8063		ERJ3GEYJ102	CHIP 1/20W 1K	1	
R8064		ERJ3GEYJ103	CHIP 1/20W 10K	1	
R8065		ERJ3GEYJ123	CHIP 1/20W 12K	1	
R8066		ERJ3GEYJ563	CHIP 1/20W 56K	1	
R8067		ERJ3GEYJ563	CHIP 1/20W 56K	1	
S6001		ESD142127		1	
T1001		ELL10R007		1	
T4001		EIQ7QE005Q	TRANSFORMER	1	
VR1001		EVM7NSW00B53		1	
VR1002		EVM7NSX00B53		1	
VR1003		EVM7NSW00B53		1	
VR2001		EVM7NSW00B15		1	
VR3001		EVM7NSX00B54		1	
VR3002		EVM7NSX00B54		1	
VR3003		EVM7NSX00B54		1	
VR3004		EVM7NSX00B14		1	
VR3005		EVM7NSX00B14		1	
VR3006		EVM7NSX00B23		1	
VR3007		EVM7NSX00B54		1	
VR3012		EVM7NSX00B23		1	
VR4001		EVM7NSX00B23		1	
VR5001		EVM7NSX00B13		1	
VR6001		EVM7NSX00B23		1	
VR6002		EVM7NSX00B14		1	
VR8001		EVM7NSX00B13		1	
VR8002		EVM7NSX00B54		1	
X1001		VSX0136	CRYSTAL OSCILLATOR	1	
X2001		VSX0154	CRYSTAL OSCILLATOR	1	
X6001		VSX0140	CRYSTAL OSCILLATOR	1	
X6002		VSX0249		1	
X8001		VSX0132	CRYSTAL OSCILLATOR	1	
			MISELLANEOUS		
		VSC2181	H.A SHIELD CASE (MAIN)	1	
		VSC2180	H.A SHIELD CASE (BOTTOM)	1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VSC1932	SHIELD CASE	1	
		VSC1358	POWER SHIELD CASE	1	
		VMZ0651	POWER SHIELD BARRIER	1	
	■	VEP06452A	OPERATION C.B.A.		
D6501		BR3668S		1	
D6502		BR3668S		1	
D6503		BR3668S		1	
D6504		BR3668S		1	
D6505		BR3668S		1	
D6506		BR3668S		1	
D6507		BR3668S		1	
D6508		MA165	DIODE	1	OR 1SS119, 1SS254
D6509		MA165	DIODE	1	OR 1SS119, 1SS254
D6510		MA165	DIODE	1	OR 1SS119, 1SS254
D6511		MA165	DIODE	1	OR 1SS119, 1SS254
D6512		MA165	DIODE	1	OR 1SS119, 1SS254
D6513		MA165	DIODE	1	OR 1SS119, 1SS254
D6514		MA165	DIODE	1	OR 1SS119, 1SS254
D6515		MA165	DIODE	1	OR 1SS119, 1SS254
D6516		MA165	DIODE	1	OR 1SS119, 1SS254
D6517		MA165	DIODE	1	OR 1SS119, 1SS254
D6518		MA165	DIODE	1	OR 1SS119, 1SS254
D6519		MA165	DIODE	1	OR 1SS119, 1SS254
P6501		VJP1606T	CONNECTOR(MALE)	1	
P6502		VJP2107	CONNECTOR	1	
S6501		ESD100121		1	
S6502		EVQQSB04B	SWITCH	1	
S6503		EVQQSB04B	SWITCH	1	
S6504		EVQQSB04B	SWITCH	1	
S6505		EVQQSB04B	SWITCH	1	
S6506		EVQQSB04B	SWITCH	1	
S6507		EVQQSB04B	SWITCH	1	
S6508		EVQQSB04B	SWITCH	1	
S6509		EVQQSB04B	SWITCH	1	
S6510		EVQQSB04B	SWITCH	1	
S6511		EVQQSB04B	SWITCH	1	
S6512		EVQQSB04B	SWITCH	1	
S6513		EVQQSB04B	SWITCH	1	
S6514		VST0098		1	
S6515		EVQQSB04B	SWITCH	1	
S6516		EVQQSB04B	SWITCH	1	
	■	VEP00K79A	CAMERA OPERATION (I) C.B.A.		
			CAPACITORS		
C001		ECEA0JKS101	E.CAPACITOR 6.3V 100U	1	
C002		ECEA0JKS101	E.CAPACITOR 6.3V 100U	1	
D001		MA165	DIODE	1	
D002		MA165	DIODE	1	
D003		MA165	DIODE	1	
D004		MA165	DIODE	1	
D005		MA165	DIODE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
D006		BR3668S		1	
P001		VJP1612T	CONNECTOR(MALE)	1	
P002		VJP1613T	CONNECTOR	1	
P003		VJP1606T	CONNECTOR(MALE)	1	
			RESISTORS		
R001		ERDS2TJ562	C.RESISTOR 1/4W 5.6K	1	
R002		ERDS2TJ563	C.RESISTOR 1/4W 56K	1	
R003		ERDS2TJ563	C.RESISTOR 1/4W 56K	1	
R004		ERDS2TJ102	C.RESISTOR 1/4W 1K	1	
R005		ERDS2TJ102	C.RESISTOR 1/4W 1K	1	
SW001		EVQQSU04W	SWITCH	1	
SW002		EVQQSU04W	SWITCH	1	
SW003		VSS0170	SWITCH	1	
SW004		EVQQSU04W	SWITCH	1	
SW005		EVQQSU04W	SWITCH	1	
SW006		VSS0126	SWITCH	1	
SW007		EVQQSU04W	SWITCH	1	
	■	VEK3522	CAMERA OPERATION (II)		
SW008		EVQQSU04W	SWITCH	1	
SW009		EVQQSU04W	SWITCH	1	
	■	VES0143	MECHANISM CONNECTION		
			MISELLANEOUS		
		ON2170	TRANSISTOR	1	
		VMX1280	SENSOR SPACER	1	
		VSS0193	MODE SW	1	
		VJP1235T	8P CONNECTOR	1	
		VJP1229R	2P CONNECTOR	1	
	■	VEK3415	SUPPLY PHOTO C.B.A.		
			MISELLANEOUS		
		PN158NVNC	PHOTO TR.	1	
		VMD0607	PHOTO HOLDER	1	
		VSH0026	SUPPLY LEAF SW	1	
	■	VEK3414	TAKE UP PHOTO C.B.A.		
			MISELLANEOUS		
		PN158NV	PHOTO TR.	1	
		VMD0606	PHOTO HOLDER	1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEK3622	ZOOM SWITCH C.B.A.		
P1507		VJP1607T	CONNECTOR(MALE)	1	
	■	VEK3623	START/STOP C.B.A.		
			MISELLANEOUS		
		EVQQSU04W	SWITCH	1	
	■	VEK3624	SUB START/STOP C.B.A.		
			MISELLANEOUS		
		EVQQSU04W	SWITCH	1	
	■	VEPOOH73B	FE HEAD C.B.A.		
C1501		ECEA1CKS100	E.CAPACITOR 16V 100U	1	
C1502		ECKZ1H472ZF	C.CAPACITOR 50V 4700P	1	
C1503		VCYE1C103MR1	S.CAPACITOR 16V 0.01U	1	
L1501		VLQEL05F221K	COIL 220UH	1	
Q1504		2SC2603	TRANSISTOR	1	
R1503		ERDS2TJ333	C.RESISTOR 1/4W 33K	1	
T1501		EIQ7QT007Q	TRANSFORMER	1	
	■	VEK3521	E.V.F. CONNECTOR C.B.A.		
J1504		VJJ0163	CONNECTOR	1	
P1505		VJP1613T	CONNECTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEK3621	14P REMOTE CONTROL C.B.A.		NV-M7E/EG/B
			MISELLANEOUS		
		VJJ0125	REMOCON JACK	1	
		VEE4074	14P MULTI CONNECTOR	1	
	■	VEK3413	14P REMOTE CONTROL C.B.A.		NV-M7EO/EN/EM/EA/A/AM
			MISELLANEOUS		
		VJJ0125	REMOCON JACK	1	
		VEE3753	14P MULTI CONNECTOR	1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

3.VW-AM7E/B/EN/A/EA/EM/ BA Mechanical Replacement Parts List

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1(1)		VKM1112	TOP CASE	1	
2(1)		VYP2011	FRONT PANEL UNIT	1	VW-AM7 E/B/A/EA
2(1)		VYP2012	FRONT PANEL UNIT	1	VW-AM7 EN/EM/BA
3(1)		VKM1251	SIDE CASE	1	
4(1)		VKM1111	REAR CASE	1	
5(1)		VGU2144	OPERATE/TV SWITCH KNOB	2	
6(1)		VGH0573	A-V TERMINAL NAME PLATE	1	
7(1)		VGH1410	REAR PANEL NAME PLATE	1	VW-AM7 E/B/EM/BA
7(1)		VGH1412	REAR PANEL NAME PLATE	1	VW-AM7 EA
7(1)		VGH1413	REAR PANEL NAME PLATE	1	VW-AM7 EN
7(1)		VGH1411	REAR PANEL NAME PLATE	1	VW-AM7 A
8(1)		VJA0481	AC CORD	1	VW-AM7 E/EN
8(1)		VJA0480	AC CORD	1	VW-AM7 B/BA
8(1)		VJA0448	AC CORD	1	VW-AM7 A/EA
8(1)		VJA0460	AC CORD	1	VW-AM7 EM
9(1)		VJA0465	DC OUTPUT CORD	1	
10(1)		VMP1168	AC-DC CORD ANGLE	1	
11(1)		VMP1010	A-V TERMINAL ANGLE	1	
12(1)		VSC1669	MAIN SHIELD CASE	1	
13(1)		VMZ1126	INSULATION BARRIER (A)	1	
14(1)		VMZ1127	INSULATION BARRIER (B)	1	
15(1)		VJF0107	BUSHING	1	VW-AM7 E/EM/EN/A/EA
15(1)		VJF0206	BUSHING	1	VW-AM7 B/BA
16(1)		ESD39317S	ALL OFF SWITCH	1	
17(1)		VMZ0580	SWITCH COVER	1	
18(1)		VMZ1128	REAR INSULATION PLATE (A)	1	
19(1)		VMZ1129	REAR INSULATION PLATE (B)	1	
20(1)		VMP1169	RF CONVERTER SUPPORT ANGLE	1	
21(1)		VMP0816	FRONT PANEL SUPPORT ANGLE	1	
22(1)		VMP0686	A-V TERMINAL SUPPORT ANGLE	1	
23(1)		VGF0163	RUBBER CAP	1	VW-AM7 E/EN/B/BA
30(2)		VPG3572	PACKING CASE	1	VW-AM7 A
30(2)		VPG3573	PACKING CASE	1	VW-AM7 BA
31(2)		VPN1297	CUSHION (TOP)	1	
32(2)		VPN1298	CUSHION (BOTTOM)	1	
33(2)		VJA0321	DIN-RF CABLE	1	
34(2)		VJA0180	BATTERY CATCHER	1	
35(2)		VQT2380	OPERATION INSTRUCTIONS	1	VW-AM7 A
35(2)		VQT2381	OPERATION INSTRUCTIONS	1	VW-AM7 BA

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

4.VW-AM7E/B/EN/A/EA/EM/BA Electrical Replacement Parts List

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.
3.Unless otherwise specified,
All resistors are in OHMS ,K=1,000 OHMS. All capacitors are in MICRO-FARADS(uf),P=uuF.
4.The P.C.Board units marked width'▮'show below the main assembled parts.
5.Printed circuit board assembly with mark(NLA) is no longer available after discontinuation of the product.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP61013A	MAIN C.B.A	1	
		VEP60052A	FRONT PANNEL C.B.A.	1	
		VEP60054A	A-V TERMINAL C.B.A.	1	
		ENC47956	RF CONVERTER	1	VW-AM7 E/EM
		ENC47957	RF CONVERTER	1	VW-AM7 B/BA
		ENC47901	RF CONVERTER	1	VW-AM7 EN/EA
		ENC47902	RF CONVERTER	1	VW-AM7 A
	▮	VEP61013A	MAIN C.B.A.		
			CAPACITORS		
C001		ECQU2A224MN	P.CAPACITOR 100V 0.22U	1	
C002		ECQU2A473MN	P.CAPACITOR 250V 0.047U	1	
C006		VCK0046	C.CAPACITOR 1000P	1	
C007		VCK0046	C.CAPACITOR 1000P	1	
C008		VCK0046	C.CAPACITOR 1000P	1	
C009		VCK0046	C.CAPACITOR 1000P	1	
C010		ECES2GG820K	E.CAPACITOR 400V 82U	1	
C011		ECQE2104KF	P.CAPACITOR 0.1U	1	
C012		ECEA1VGE101	E.CAPACITOR 35V 100U	1	
C013		ECEA1VGE220	E.CAPACITOR 35V 22U	1	
C014		ECEA1CGE330	E.CAPACITOR 16V 33U	1	
C015		ECQV1H104JZ	P.CAPACITOR 50V 0.1U	1	
C016		VCK0062	C.CAPACITOR	1	
C018		ECKD3A101KB	C.CAPACITOR 1KV 100U	1	
C101		ECEA1EF102	E.CAPACITOR 25V 1000U	1	
C102		ECEA1EGE471	E.CAPACITOR 25V 470U	1	
C103		ECEA1VGE101	E.CAPACITOR 35V 100U	1	
C104		ECEA1VGE100	E.CAPACITOR 35V 10U	1	
C105		ECEA1HU010	E.CAPACITOR 50V 1U	1	
C106		ECEA1EU100	E.CAPACITOR 25V 10U	1	
C107		ECEA1EN4R7SB	E.CAPACITOR 25V 4.7U	1	
C108		ECEA1EGE470	E.CAPACITOR 25V 47U	1	
C109		ECEA1EGE470	E.CAPACITOR 25V 47U	1	
C110		ECEA1CM102	E.CAPACITOR 16V 1000U	1	
C111		ECEA1CU330	E.CAPACITOR 16V 33U	1	
C112		ECQV1H224JZ	P.CAPACITOR 50V 0.22U	1	
C113		ECQV1H104JZ	P.CAPACITOR 50V 0.1U	1	
C114		ECEA1EGE221	E.CAPACITOR 25V 220U	1	
C115		ECQV1H104JZ	P.CAPACITOR 50V 0.1U	1	
C116		ECEA1EGE100	E.CAPACITOR 25V 10U	1	
C117		ECKD2H221KB	C.CAPACITOR 500V 220U	1	
D001		S1WBA60S	DIODE	1	
D002		ERA22-08	DIODE	1	
D003		ERA82-004	DIODE	1	
D004		MA165	DIODE	1	
D005		VSD0001	DIODE	1	
D006		RMPG06GPKG3	DIODE	1	
D007		MA4270H	DIODE	1	
D008		ERA82-004	DIODE	1	
D101		FML12S	DIODE	1	
D102		RMPG06GPKG3	DIODE	1	
D103		SB340-5013L	DIODE	1	
D107		RD8.2JS-T1	DIODE	1	
D108		OA95A	LED	1	
D109		MA165	DIODE	1	
D110		MA165	DIODE	1	
D111		OA95A	LED	1	
D112		MA4056M	DIODE	1	
D113		MA165	DIODE	1	
D114		MA4100L	DIODE	1	
F001		XBA2C10TB0	FUSE	1	
IC1		VCR0189	IC	1	
IC101		VCR0190	IC	1	
IC102		UPC78M12H	IC	1	
L001		VLF0615	COIL	1	
L002		VLF0616	COIL	1	
L3		VLP0064	COIL	1	
L4		VLP0064	COIL	1	
L101		VLQ0098	COIL	1	
L102		VLQEL06R470	COIL	1	
L103		VLP0064	COIL	1	
P6		VJP1143	CONNECTOR(MALE)	1	
PHC1		PC111A	PHOTO COUPLER	1	
Q001		2SK796	TRANSISTOR	1	
Q101		2SB953	TRANSISTOR	1	
Q102		2SD638	TRANSISTOR	1	
Q103		2SD636	TRANSISTOR	1	
			RESISTORS		
R001		ERDS2TJ114	C.RESISTOR 1/4W 110K	1	
R002		ERDS2TJ114	C.RESISTOR 1/4W 110K	1	
R003		ERDS2TJ114	C.RESISTOR 1/4W 110K	1	
R004		ERDS2TJ114	C.RESISTOR 1/4W 110K	1	
R005		ERG2SJ104	M.RESISTOR 2W 100K	1	
R006		ERX1SJR27	M.RESISTOR 1W 0.27	1	
R007		ERDS2TJ271	C.RESISTOR 1/4W 270	1	
R008		ERDS2TJ680	C.RESISTOR 1/4W 68	1	
R009		ERDS2TJ563	C.RESISTOR 1/4W 56K	1	
R010		ERDS2TJ183	C.RESISTOR 1/4W 18K	1	
R011		ERDS2TJ562	C.RESISTOR 1/4W 5.6K	1	
R012		ERDS2TJ101	C.RESISTOR 1/4W 100	1	
R013		ERC12GJ334	S.RESISTOR 1/2W 330K	1	
R015		ERDS2TJ120	C.RESISTOR 1/4W 12	1	
R016		ERDS2TJ220	C.RESISTOR 1/4W 22	1	
R101		ERF2AKR22	W.RESISTOR 2W 0.22	1	
R102		ERDS2TJ222	C.RESISTOR 1/4W 2.2K	1	
R103		ERG2ANJ221	M.RESISTOR 2W 220	1	
R105		ERX1SJU1R0	M.RESISTOR 1W 1	1	
R106		ERX1SJU1R0	M.RESISTOR 1W 1	1	
R107		ERX1SJU1R0	M.RESISTOR 1W 1	1	
R108		ERX1SJU1R0	M.RESISTOR 1W 1	1	

To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

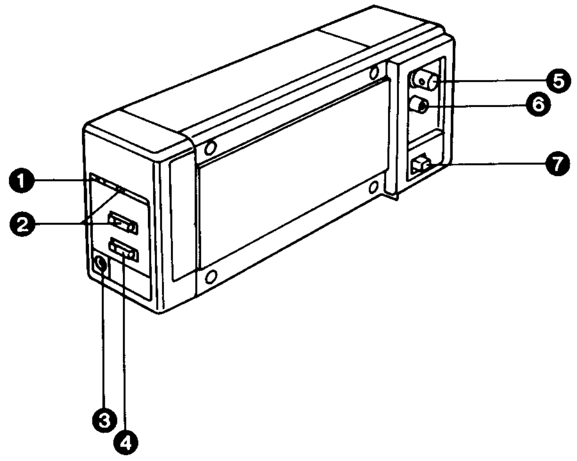
Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R109		ERDS2TJ223	C.RESISTOR 1/4W 22K	1	
R110		ERDS2TJ104	C.RESISTOR 1/4W 100K	1	
R111		ERDS2TJ183	C.RESISTOR 1/4W 18K	1	
R112		ERDS2TJ105	C.RESISTOR 1/4W 1000K	1	
R113		ERDS2TJ272	C.RESISTOR 1/4W 2.7K	1	
R114		ERDS2TJ223	C.RESISTOR 1/4W 22K	1	
R115		ERDS2TJ183	C.RESISTOR 1/4W 18K	1	
R116		ERDS2TJ822	C.RESISTOR 1/4W 8.2K	1	
R117		ERDS2TJ821	C.RESISTOR 1/4W 820	1	
R118		ERDS2TJ682	C.RESISTOR 1/4W 6.8K	1	
R119		ERDS2TJ821	C.RESISTOR 1/4W 820	1	
R120		ERDS2TJ682	C.RESISTOR 1/4W 6.8K	1	
R121		ERDS2TJ222	C.RESISTOR 1/4W 2.2K	1	
R122		ERDS2TJ183	C.RESISTOR 1/4W 18K	1	
R123		ERDS2TJ271	C.RESISTOR 1/4W 270	1	
R124		ERDS2TJ681	C.RESISTOR 1/4W 680	1	
R125		ERG3SJ561	M.RESISTOR 3W 560	1	
R126		ERDS2TJ103	C.RESISTOR 1/4W 10K	1	
R128		ERDS2TJ103	C.RESISTOR 1/4W 10K	1	
T001		VLT0523	TRANSFORMER	1	
TH101		ERTD2ZHL332S	THERMISTOR 3.3K	1	S
TH102		ERTD2ZIL154S	THERMISTOR 150K	1	S
TH103		ERTD2ZHL153S	THERMISTOR 15K	1	S
VR101		EVN3ACA00B53	V.RESISTOR 5K	1	
VR102		EVN3ACA00B24	V.RESISTOR 20K	1	
VR103		EVN3ACA00B53	V.RESISTOR 5K	1	
ZNR1		ENB461D-05A	SURGE ABSORBER 460V	1	
			MISELLANEOUS		
		VJC6320	FUSE HOLDER	2	
		VMZ0429	FUSE COVER	1	
		VMZ0193	FUSE COVER	4	
		VMZ0997	TUBE FOR AC CORD	1	
		VMZ1104	INSULATING SHEET	1	
		VSC2215	HEAT SINK (A)	1	
		VSC2216	HEAT SINK (B)	1	
		VSC2227	HEAT SINK (C)	1	
	■	VEP60052A	FRONT PANNEL C.B.A.		
D301		LN21RCPHLM	LED	1	
D302		LN21RCPHLM	LED	1	
D303		D3S4M	DIODE	1	
			RESISTORS		
R301		ERDS2TJ222	C.RESISTOR 1/4W 2.2K	1	
R302		ERDS2TJ122	C.RESISTOR 1/4W 1.2K	1	
R303		ERDS2TJ102	C.RESISTOR 1/4W 1K	1	
SW301		ESD27170	SWITCH	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
SW302		ESD27170	SWITCH	1	
			MISELLANEOUS		
		KL-04	LED SPACER	1	
		VJJ0128	EXT BATTERY TERMINAL	1	
	■	VEP60054A	A-V TERMINAL C.B.A.		
			CAPACITORS		
C201		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C202		ECKF1H561KB	C.CAPACITOR 50V 560P	1	
C203		ECEA0JU102	E.CAPACITOR 6.3V 1000U	1	
C204		ECEA1CSS221	E.CAPACITOR 16V 220U	1	
C206		ECEA0JU470	E.CAPACITOR 6.3V 47U	1	
L201		VLF0413	FILTER	1	
Q201		2SB641	TRANSISTOR	1	
Q202		2SC2206	TRANSISTOR	1	
			RESISTORS		
R201		ERDS2TJ333	C.RESISTOR 1/4W 33K	1	
R202		ERDS2TJ123	C.RESISTOR 1/4W 12K	1	
R203		ERDS2TJ561	C.RESISTOR 1/4W 560	1	
R204		ERDS2TJ680	C.RESISTOR 1/4W 68	1	
R205		ERDS2TJ102	C.RESISTOR 1/4W 1K	1	
R206		ERDS2TJ392	C.RESISTOR 1/4W 3.9K	1	
R207		ERDS2TJ152	C.RESISTOR 1/4W 1.5K	1	

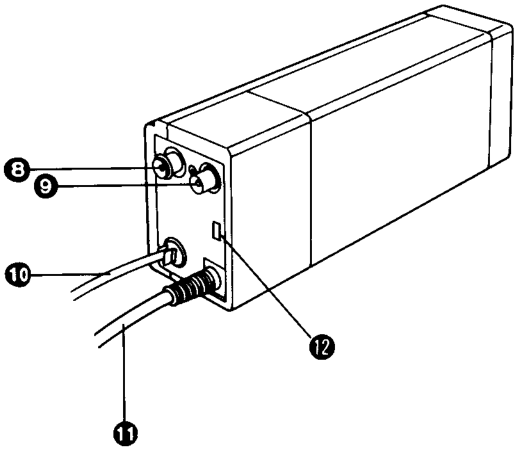
To guarantee the FUNCTION,SAFETY and RELIABLITY of repaired units,only use ORIGINAL REPLACEMENT PARTS which are listed with their part numbers in this parts list section.

1. CONTROLS AND COMPONENTS

FRONT SIDE



REAR SIDE



- ❶ Charging Indicator
- ❷ Operation Switch with Indicator
- ❸ Battery Pack Charging Socket
- ❹ TV/VTR Selector
- ❺ Video Output Socket
- ❻ Audio Output Socket
- ❼ Power On/Off Switch
- ❽ RF Input Socket
- ❾ RF Output Socket
- ❿ Mains Lead
- ⓫ Adaptor Cable
- ⓬ CH Select (for EN/A/EA)

2. DISASSEMBLY METHOD

1. Removal of Top Case

Unscrew the 4 screws (A) and remove the Top Case.

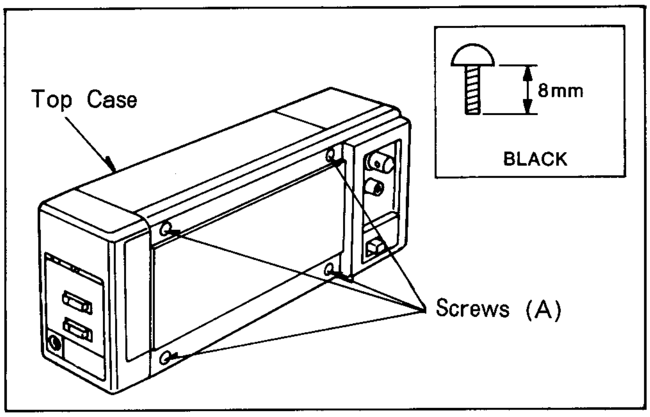

Top Case
8mm
BLACK
Screws (A)

Fig.1

2. Removal of Front Panel

Remove the Front Panel disconnecting the connector P1.

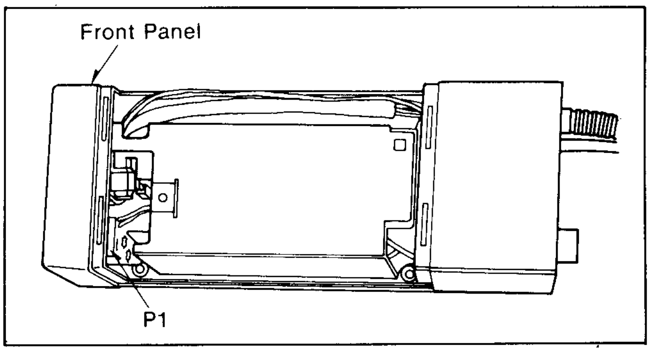

Front Panel
P1

Fig.2

3. Removal of Main Circuit Board

Unscrew the 2 screws (B) and remove the Main Circuit Board.

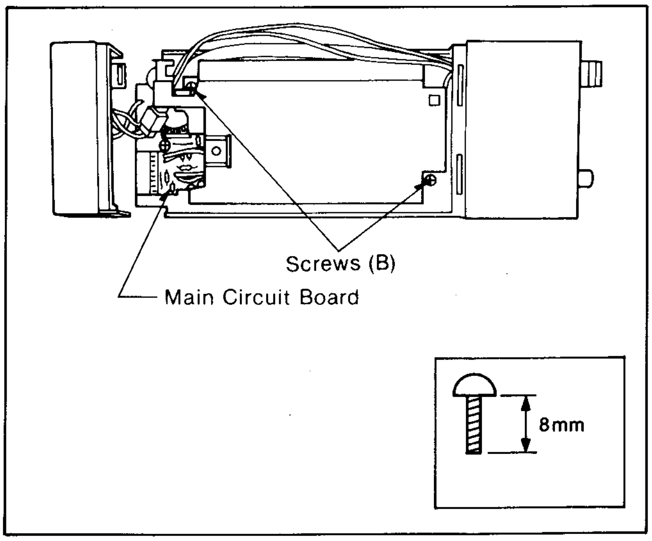

Screws (B)
Main Circuit Board
8mm

Fig.3

4. Removal of Rear Case

Unscrew the 3 screws (C) remove the Rear Case.

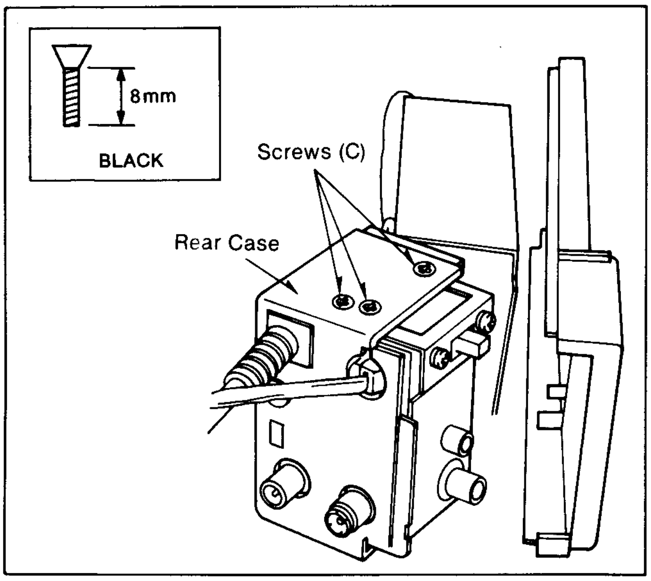

8mm
BLACK
Screws (C)
Rear Case

Fig.4

5. Removal of Main Sield Case

Diconnect the connector P6 and connector (E) and remove the Main Shield Case.

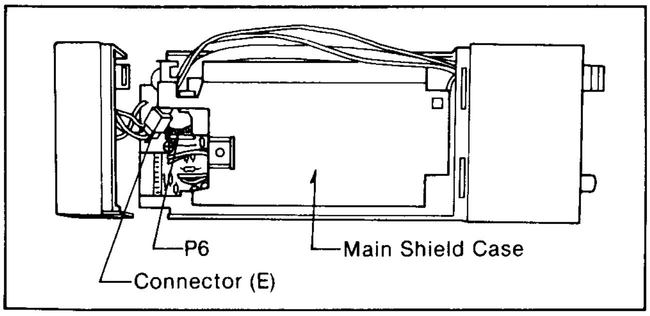

P6
Main Shield Case
Connector (E)

Fig.5

6. Removal of Front Panel Circuit Board

Unscrew the 2 screws (F) and remove the Front Panel Circuit Board.

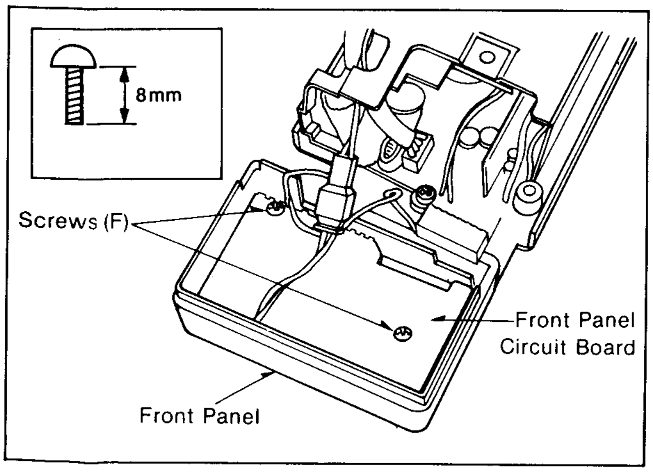

8mm
Screws (F)
Front Panel Circuit Board
Front Panel

Fig.6

7. Removal of A–V Terminal Circuit Board

Remove shield case and unscrew the 2 screws (G) and remove the A–V Terminal Circuit Board.

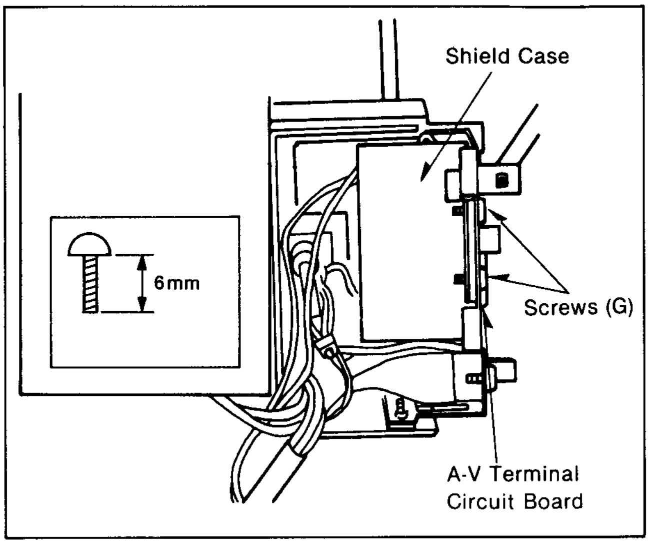

Shield Case
6mm
Screws (G)
A-V Terminal Circuit Board

Fig.7

3. ELECTRICAL ADJUSTMENT PROCEDURES

This section provides ·complete electrical adjustment procedures which may be required for electronic circuit of the AC Adaptor.

3-1. TEST EQUIPMENTS

To perform the electrical adjustments completely following equipments are required.

1. D.V.M. (Digital Volt Meter)
   Voltage Range :0.001∼50V
2. Oscilloscope
   Voltage Range :0.005∼50V/div
3. DC Ammeter
   Current Range :0∼10A
4. DC Voltmeter
   Voltage Range :0∼20V
5. Plastic Tip Driver
6. Resistor (5ohm Variable 200W)
7. DC Power Supply (5A/20V)

3-2. POWER SUPPLY OUTPUT VOLTAGE ADJUSTMENT

TP	ADJ.	MODE	INPUT
CONNECTOR P6-(1) (+) -(3) (−)	VR101	POWER SUPPLY	
TAPE	**M. EQ.**	**SPEC.**	
	D.V.M.	13.0+−0.3V	

1. Connect the VHS MOVIE to AC Adaptor.
2. Turn the unit in REC−PLAY mode.
3. Adjust VR101 so that the output voltage at pin 1 of connector P6 is within specification.

3-3. INITIAL CHARGE CURRENT AND SCHMITT VOLTAGE ADJUSTMENT

TP	ADJ.	MODE	INPUT
BATTERY HOLDER-(+) -(−)	VR102 VR103	CHARGE	
TAPE	**M. EQ.**	**SPEC.**	
	DC AM/D.V.M	A=1.5+−0.005[A] VR102 From High to Low VR103	

1. Make the connection as shown below.

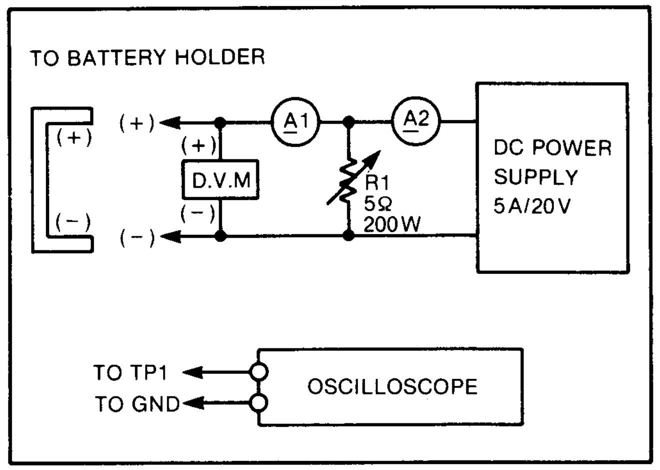
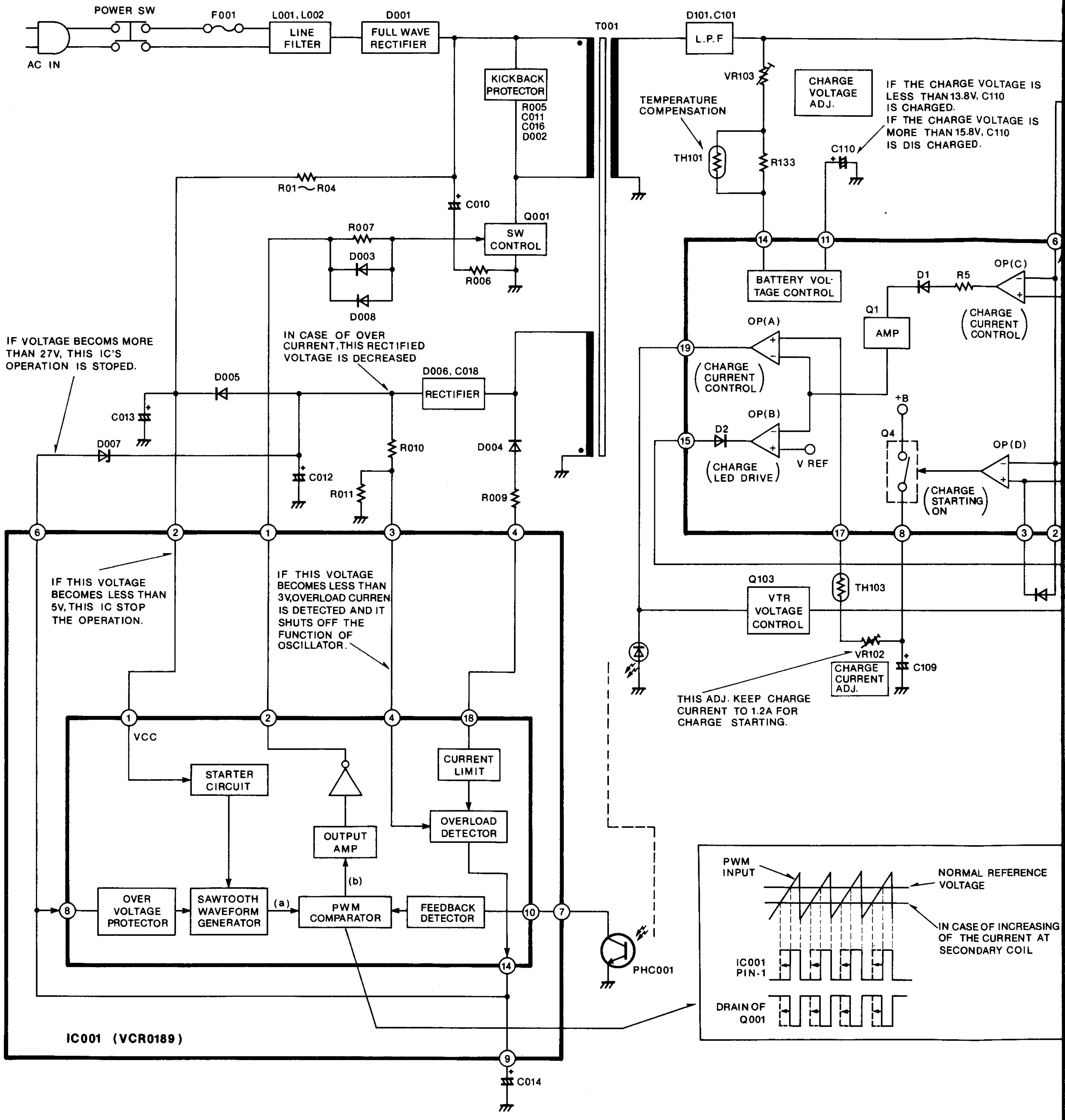

TO BATTERY HOLDER
(+)
(−)
(+)
(−)
D.V.M
A1
A2
R1
5Ω
200W
DC POWER SUPPLY 5A/20V
TO TP1
TO GND
OSCILLOSCOPE

Fig.8

2. Adjust the output of the DC power supply so that the indication of the DC voltmeter becomes 14.0V and adjust R1 so that the indication of the DC ammeter (A2) becomes 3.0A.
3. Adjust VR102 so that the indication of the DC ammeter (A1) becomes 1.5+−0.05A.
4. Adjust the output level of the DC power supply to 15.3V.
5. Adjust the VR103 so that voltage at TP101 is changed from high (approx.15V) to low (approx.0.5).

It is also available to use a resistor 5ohm/50W or 2 pieces of 10ohm/20W resistors inparallel use or equevalent, instead of variable resistor, 5o hm/200W to get specified current.

4. AC ADAPTOR BLOCK DIAGRAM


POWER SW
AC IN
F001
L001, L002
LINE FILTER
D001
FULL WAVE RECTIFIER
T001
KICKBACK PROTECTOR
R005
C011
C016
D002
R01∼R04
C010
Q001
SW CONTROL
R007
D003
D008
R006
D005
C013
D007
C012
R011
R010
D006, C018
RECTIFIER
D004
R009
VCC
STARTER CIRCUIT
OUTPUT AMP
CURRENT LIMIT
OVERLOAD DETECTOR
OVER VOLTAGE PROTECTOR
SAWTOOTH WAVEFORM GENERATOR
(a)
(b)
PWM COMPARATOR
FEEDBACK DETECTOR
C014
D101, C101
L.P.F
VR103
TEMPERATURE COMPENSATION
TH101
R133
CHARGE VOLTAGE ADJ.
C110
BATTERY VOLTAGE CONTROL
OP(A)
(CHARGE CURRENT CONTROL)
OP(B)
D2
(CHARGE LED DRIVE)
V REF
Q1
AMP
D1
R5
OP(C)
(CHARGE CURRENT CONTROL)
+B
Q4
OP(D)
(CHARGE STARTING ON)
Q103
VTR VOLTAGE CONTROL
TH103
VR102
CHARGE CURRENT ADJ.
C109
PHC001
PWM INPUT
NORMAL REFERENCE VOLTAGE
IC001 PIN-1
DRAIN OF Q001

IF THE CHARGE VOLTAGE IS LESS THAN 13.8V, C110 IS CHARGED.
IF THE CHARGE VOLTAGE IS MORE THAN 15.8V, C110 IS DIS CHARGED.

IF VOLTAGE BECOMS MORE THAN 27V, THIS IC'S OPERATION IS STOPED.

IN CASE OF OVER CURRENT, THIS RECTIFIED VOLTAGE IS DECREASED

IF THIS VOLTAGE BECOMES LESS THAN 5V, THIS IC STOP THE OPERATION.

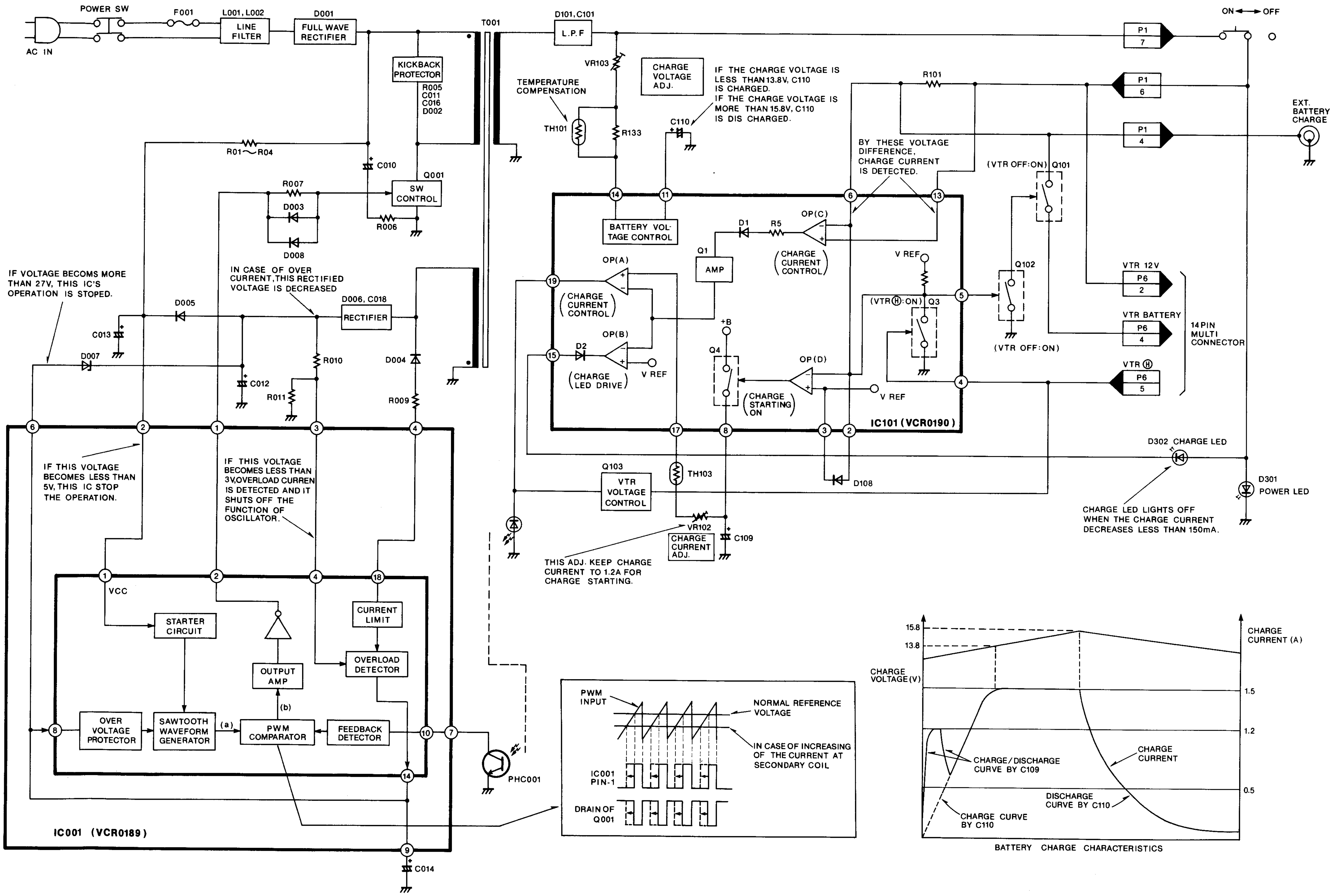
IF THIS VOLTAGE BECOMES LESS THAN 3V,OVERLOAD CURRENT IS DETECTED AND IT SHUTS OFF THE FUNCTION OF OSCILLATOR.

THIS ADJ. KEEP CHARGE CURRENT TO 1.2A FOR CHARGE STARTING.

IN CASE OF INCREASING OF THE CURRENT AT SECONDARY COIL

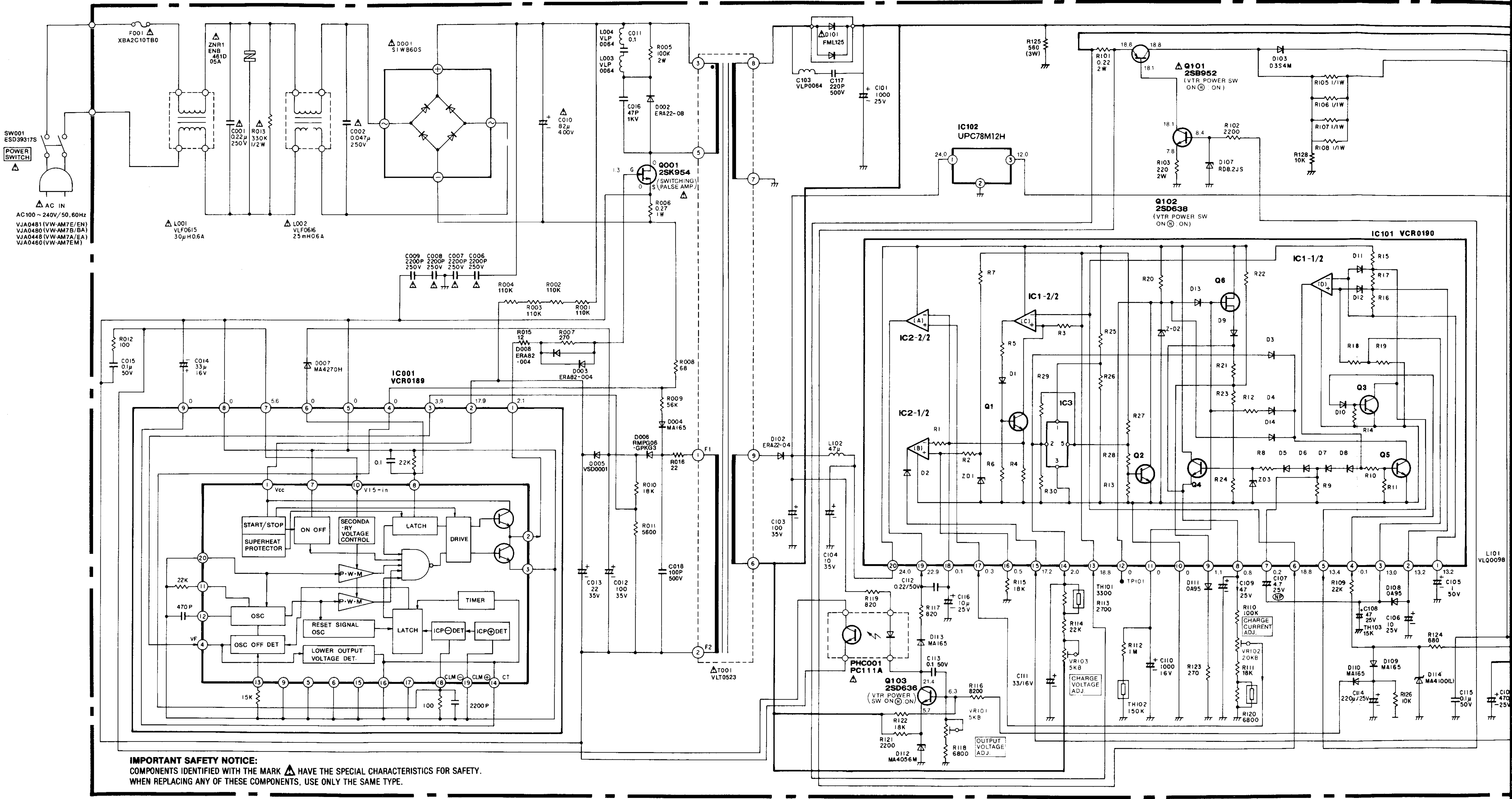
IC001 (VCR0189)

4. AC ADAPTOR BLOCK DIAGRAM


AC IN
POWER SW
F001
L001, L002
LINE FILTER
D001
FULL WAVE RECTIFIER
T001
KICKBACK PROTECTOR
R005
C011
C016
D002
R01～R04
C010
Q001
SW CONTROL
R007
D003
D008
R006
IF VOLTAGE BECOMS MORE THAN 27V, THIS IC'S OPERATION IS STOPED.
IN CASE OF OVER CURRENT, THIS RECTIFIED VOLTAGE IS DECREASED
D005
D006, C018
RECTIFIER
C013
D007
C012
R011
R010
D004
R009
IF THIS VOLTAGE BECOMES LESS THAN 5V, THIS IC STOP THE OPERATION.
IF THIS VOLTAGE BECOMES LESS THAN 3V, OVERLOAD CURREN IS DETECTED AND IT SHUTS OFF THE FUNCTION OF OSCILLATOR.
VCC
STARTER CIRCUIT
OUTPUT AMP
CURRENT LIMIT
OVERLOAD DETECTOR
OVER VOLTAGE PROTECTOR
SAWTOOTH WAVEFORM GENERATOR
(a)
(b)
PWM COMPARATOR
FEEDBACK DETECTOR
IC001 (VCR0189)
C014
PHC001
D101, C101
L.P.F
VR103
CHARGE VOLTAGE ADJ.
IF THE CHARGE VOLTAGE IS LESS THAN 13.8V, C110 IS CHARGED.
IF THE CHARGE VOLTAGE IS MORE THAN 15.8V, C110 IS DIS CHARGED.
TEMPERATURE COMPENSATION
TH101
R133
C110
BY THESE VOLTAGE DIFFERENCE, CHARGE CURRENT IS DETECTED.
R101
BATTERY VOLTAGE CONTROL
D1
R5
OP(C)
CHARGE CURRENT CONTROL
Q1
AMP
OP(A)
CHARGE CURRENT CONTROL
OP(B)
D2
CHARGE LED DRIVE
V REF
+B
Q4
OP(D)
CHARGE STARTING ON
V REF
(VTR Ⓗ: ON) Q3
IC101 (VCR0190)
(VTR OFF: ON) Q101
Q102
(VTR OFF: ON)
ON ◄► OFF
P1 7
P1 6
P1 4
EXT. BATTERY CHARGE
VTR 12V
P6 2
VTR BATTERY
P6 4
VTR Ⓗ
P6 5
14PIN MULTI CONNECTOR
D302 CHARGE LED
D301 POWER LED
CHARGE LED LIGHTS OFF WHEN THE CHARGE CURRENT DECREASES LESS THAN 150mA.
Q103
VTR VOLTAGE CONTROL
TH103
D108
VR102
CHARGE CURRENT ADJ.
C109
THIS ADJ. KEEP CHARGE CURRENT TO 1.2A FOR CHARGE STARTING.
PWM INPUT
NORMAL REFERENCE VOLTAGE
IN CASE OF INCREASING OF THE CURRENT AT SECONDARY COIL
IC001 PIN-1
DRAIN OF Q001
CHARGE VOLTAGE (V)
15.8
13.8
CHARGE CURRENT (A)
1.5
1.2
0.5
CHARGE/DISCHARGE CURVE BY C109
CHARGE CURRENT
DISCHARGE CURVE BY C110
CHARGE CURVE BY C110

BATTERY CHARGE CHARACTERISTICS

5. AC ADAPTOR SCHEMATIC DIAGRAM


SW001
ESD39317S
POWER SWITCH
AC IN
AC100 ~ 240V/50,60Hz
VJA0481 (VW-AM7E/EN)
VJA0480 (VW-AM7B/BA)
VJA0448 (VW-AM7A/EA)
VJA0460 (VW-AM7EM)
F001
XBA2C10TB0
ZNR1
ENB
461D
05A
C001
0.22μ
250V
R013
330K
1/2W
L001
VLF0615
30μH0.6A
L002
VLF0616
25mH06A
C002
0.047μ
250V
D001
S1WB60S
C010
82μ
400V
L004
VLP
0064
L003
VLP
0064
C011
0.1
R005
100K
2W
C016
47P
1KV
D002
ERA22-08
Q001
2SK954
(SWITCHING PALSE AMP)
R006
0.27
1W
C009 2200P 250V
C008 2200P 250V
C007 2200P 250V
C006 2200P 250V
R004 110K
R002 110K
R003 110K
R001 110K
R012 100
C015 0.1μ 50V
C014 33μ 16V
D007 MA4270H
R015 12
R007 270
D008 ERA82-004
D003 ERA82-004
R008 68
R009 56K
D004 MA165
D006 RMPG06-GPKG3
D005 VSD0001
R016 22
R010 18K
R011 5600
C018 100P 500V
C013 22 35V
C012 100 35V
IC001
VCR0189
Vcc
V15-in
START/STOP
SUPERHEAT PROTECTOR
ON OFF
SECONDARY VOLTAGE CONTROL
LATCH
DRIVE
P·W·M
OSC
OSC OFF DET
RESET SIGNAL OSC
LOWER OUTPUT VOLTAGE DET.
TIMER
ICP⊖DET
ICP⊕DET
CLM⊖
CLM⊕
CT
VF
22K
470P
15K
100
2200P
0.1
22K
T001
VLT0523
F1
F2
D101
FML125
C103
VLP0064
C117
220P
500V
C101
1000
25V
D102
ERA22-04
L102
47μ
C103
100
35V
C104
10
35V
R125
560
(3W)
IC102
UPC78M12H
24.0
12.0
R101
0.22
2W
Q101
2SB952
(VTR POWER SW ON Ⓗ ON)
D103
D3S4M
R105 1/1W
R106 1/1W
R107 1/1W
R108 1/1W
R128
10K
R102
2200
R103
220
2W
D107
RD8.2JS
Q102
2SD638
(VTR POWER SW ON Ⓗ ON)
IC101 VCR0190
IC1-1/2
IC1-2/2
IC2-2/2
IC2-1/2
IC3
Q1
Q2
Q3
Q4
Q5
Q6
R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16 R17 R18 R19 R20 R21 R22 R23 R24 R25 R26 R27 R28 R29 R30
D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14
ZD1 ZD3 Z-D2
R119
820
PHC001
PC111A
C112
0.22/50V
C116
10μ
25V
R117
820
D113
MA165
C113
0.1 50V
Q103
2SD636
(VTR POWER SW ON Ⓗ ON)
R116
8200
VR101
5KB
R122
18K
R121
2200
D112
MA4056M
R118
6800
OUTPUT VOLTAGE ADJ.
C111
33/16V
R115
18K
TH101
3300
R113
2700
R114
22K
VR103
5KB
CHARGE VOLTAGE ADJ.
R112
1M
TH102
150K
C110
1000
16V
R123
270
TP101
D111
0A95
C109
47
25V
C107
4.7
25V
NP
R110
100K
CHARGE CURRENT ADJ.
VR102
20KB
R111
18K
R120
6800
R109
22K
C108
47
25V
TH103
15K
D108
0A95
C106
10
25V
C105
1
50V
D110
MA165
D109
MA165
C114
220μ/25V
R126
10K
D114
MA4100(L)
R124
680
C115
0.1μ
50V
L101
VLQ0098

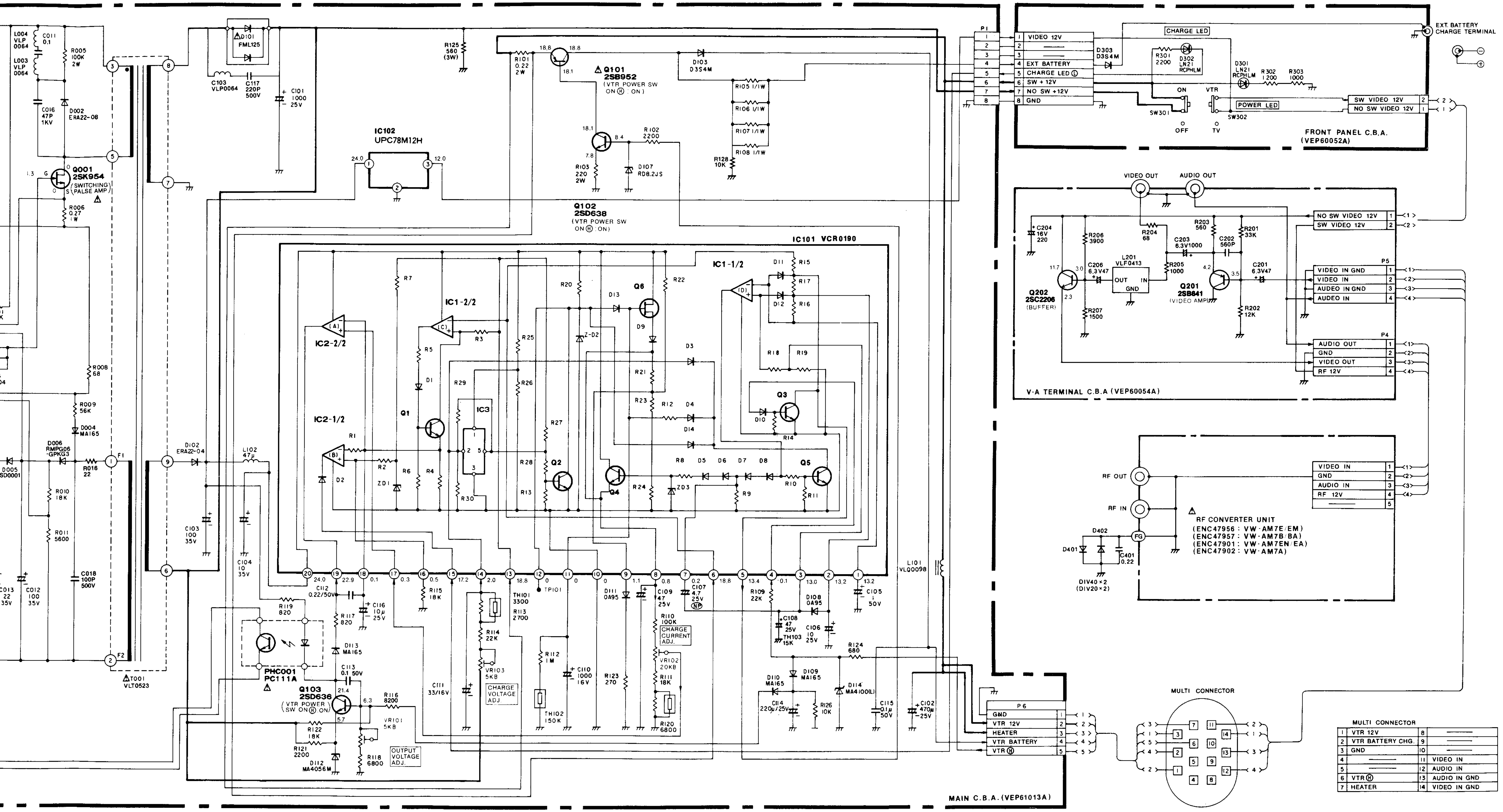
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

NOTE 1. WHEN MEASURE THE VOLTAGE OF THE AC ADAPTOR, CONNECT THE PROBE (EARTH SIDE) OF MEASURING EQUIPMENT AS FOLLOWS.
PRIMARY SIDE .... MAIN C.B.A. C010 –
SECONDARY SIDE ..... AC ADAPTOR CHASSIS EARTH

NOTE 2. THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS MEASURED WHEN INPUT AC 220V IS APPLIED.

NOTE: THE MEASURE


IC101 VCR0190
IC102 UPC78M12H
Q001 2SK954 (SWITCHING) (PALSE AMP)
Q101 2SB952 (VTR POWER SW ON Ⓗ ON)
Q102 2SD638 (VTR POWER SW ON Ⓗ ON)
Q103 2SD636 (VTR POWER SW ON Ⓗ ON)
PHC001 PC111A
T001 VLT0523
L101 VLQ0098
CHARGE CURRENT ADJ.
CHARGE VOLTAGE ADJ
OUTPUT VOLTAGE ADJ.
MAIN C.B.A. (VEP61013A)
EXT. BATTERY CHARGE TERMINAL
CHARGE LED
POWER LED
FRONT PANEL C.B.A. (VEP60052A)
VIDEO OUT
AUDIO OUT
Q202 2SC2206 (BUFFER)
Q201 2SB641 (VIDEO AMP)
V-A TERMINAL C.B.A (VEP60054A)
RF OUT
RF IN
RF CONVERTER UNIT
(ENC47956 : VW-AM7E/EM)
(ENC47957 : VW-AM7B/BA)
(ENC47901 : VW-AM7EN/EA)
(ENC47902 : VW-AM7A)
MULTI CONNECTOR

MULTI CONNECTOR

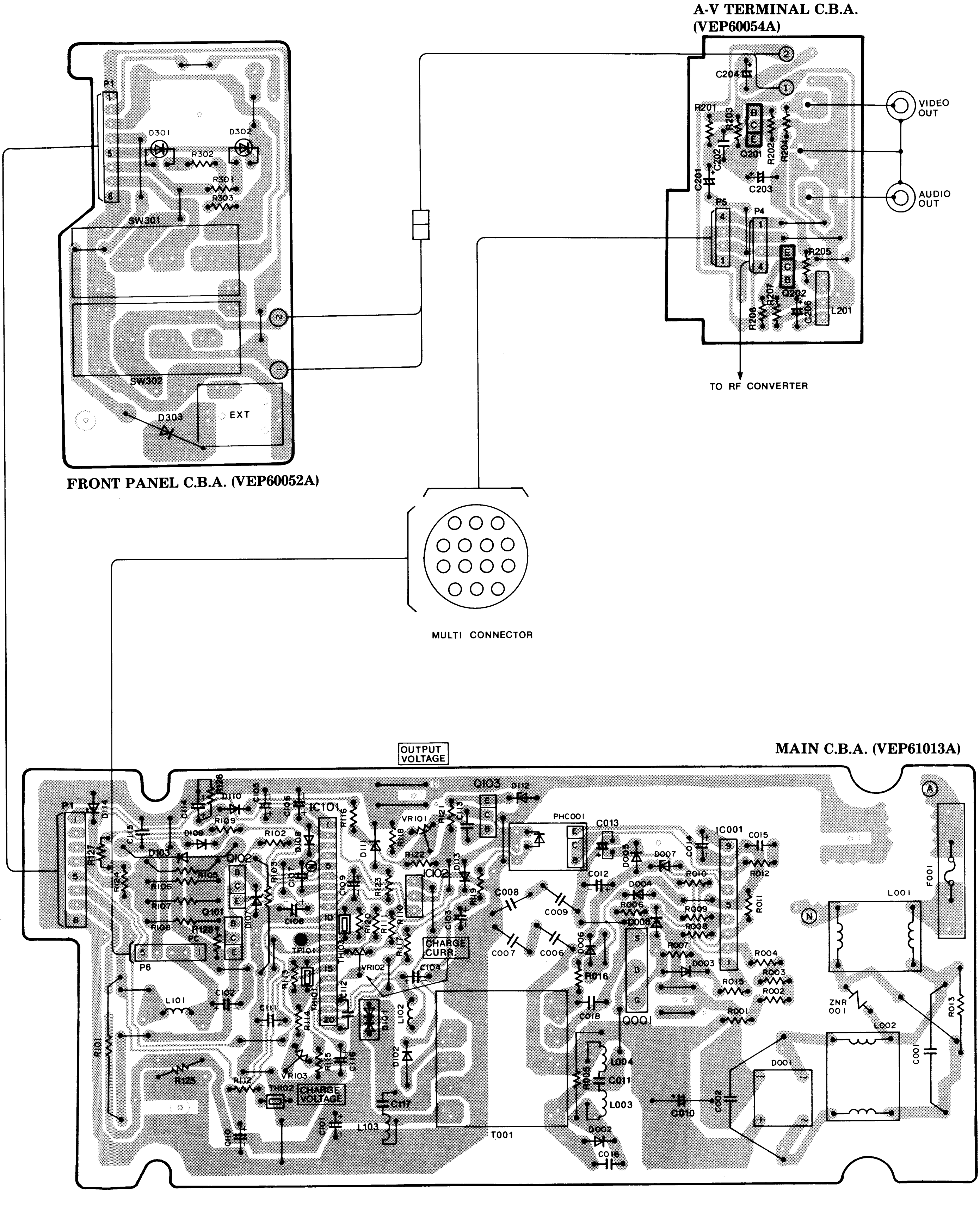
1	VTR 12V	8	———
2	VTR BATTERY CHG.	9	———
3	GND	10	———
4	———	11	VIDEO IN
5	———	12	AUDIO IN
6	VTR Ⓗ	13	AUDIO IN GND
7	HEATER	14	VIDEO IN GND

NOTE 1. WHEN MEASURE THE VOLTAGE OF THE AC ADAPTOR, CONNECT THE PROBE (EARTH SIDE) OF MEASURING EQUIPMENT AS FOLLOWS.
PRIMARY SIDE .... MAIN C.B.A. C010 —
SECONDARY SIDE ..... AC ADAPTOR CHASSIS EARTH

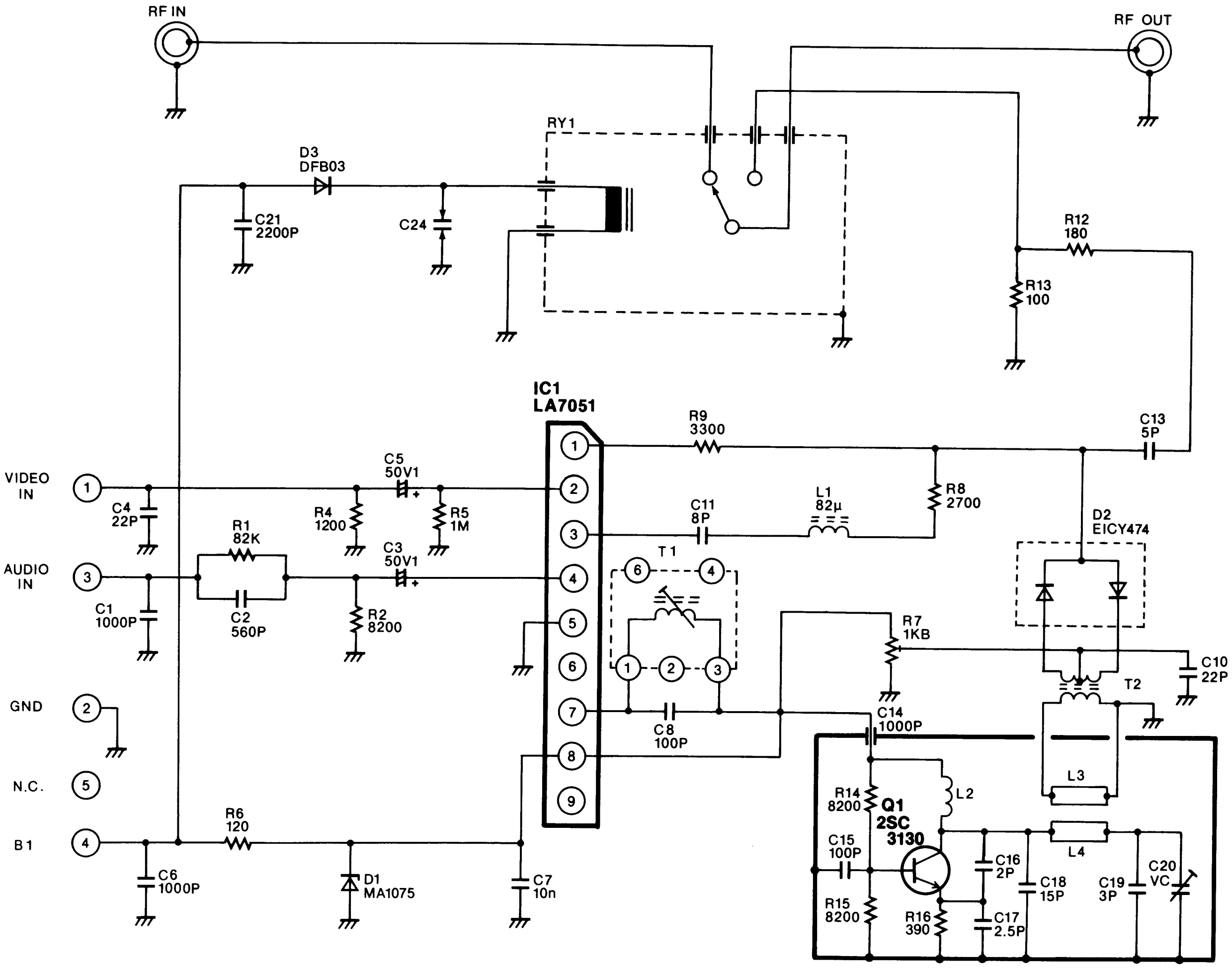
NOTE 2. THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS MEASURED WHEN INPUT AC 220V IS APPLIED.

NOTE: THE MEASUREMENT MODE OF DC VOLTAGE ON THIS DIAGRAM IS NOLOAD.

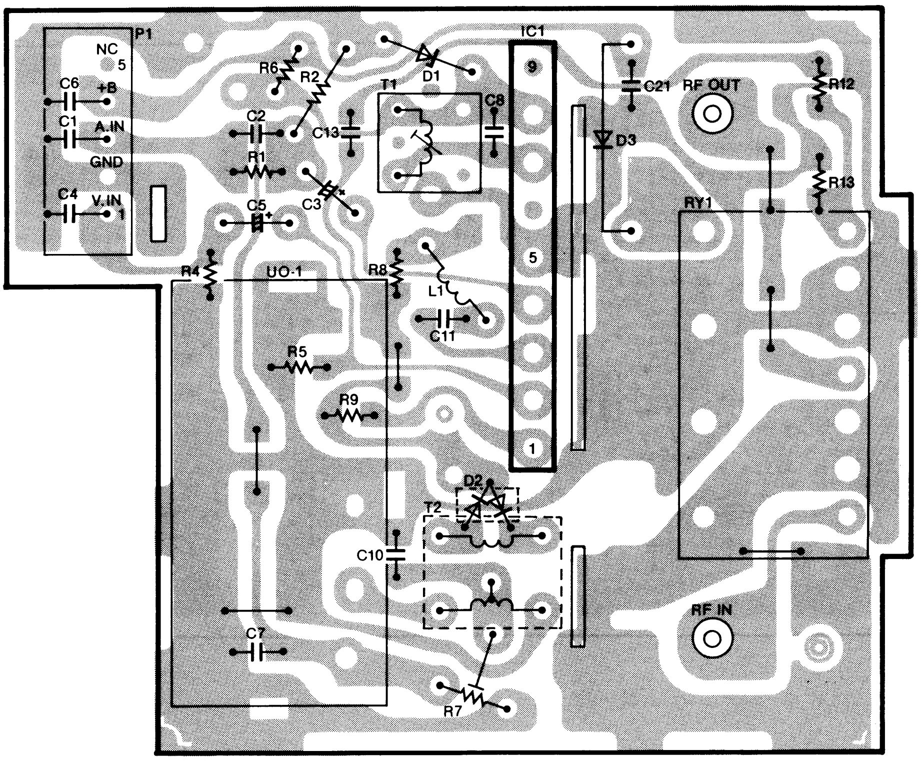
6. MAIN C.B.A. (VEP61013A), FRONT PANEL C.B.A. (VEP60054A) & A-V TERMINAL C.B.A. (VEP60052A)


A-V TERMINAL C.B.A.
(VEP60054A)
C204
R201
R203
R202
R204
Q201
C202
C201
C203
P5
P4
R205
Q202
R206
R207
C206
L201
VIDEO OUT
AUDIO OUT
TO RF CONVERTER
P1
D301
D302
R302
R301
R303
SW301
SW302
D303
EXT
FRONT PANEL C.B.A. (VEP60052A)
MULTI CONNECTOR
OUTPUT VOLTAGE
MAIN C.B.A. (VEP61013A)
D114
R126
D110
C105
C106
IC101
R116
Q103
D112
C114
R109
C115
D109
R102
D108
VR101
R121
C113
PHC001
C013
IC001
C015
R127
D103
Q102
D111
R118
R122
IC102
D113
D005
D007
C014
R012
R124
R106
R105
R103
C107
C109
R123
R119
C012
R010
R107
Q101
D107
C108
C008
C009
D004
R006
R011
R108
R128
PC
R120
R111
R110
C103
D008
R009
R008
F001
L001
P6
TP101
TH103
R117
CHARGE CURR.
C007
C006
D006
R007
R004
R113
VR102
C104
R016
D003
R003
R015
R002
C102
C112
L101
C111
R114
D101
L102
C018
Q001
R001
ZNR 001
R013
R101
VR103
R115
C116
D102
L004
L002
C001
R125
R112
TH102
CHARGE VOLTAGE
C117
R005
C011
D001
L003
C010
C002
C110
C101
L103
T001
D002
C016

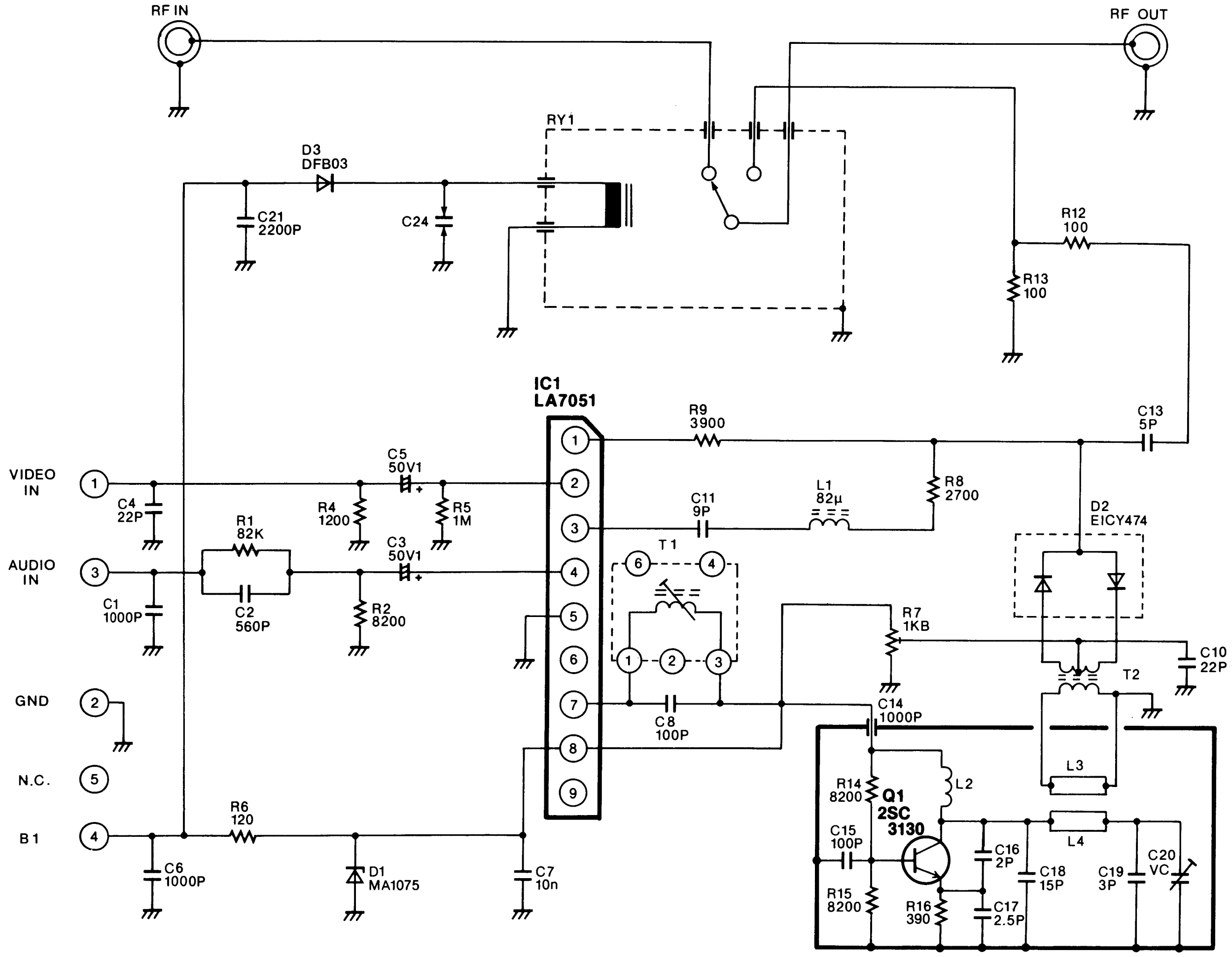
7. RF CONVERTER SCHEMATIC DIAGRAM (VW-AM7E/EM)


RF IN
RF OUT
RY1
D3
DFB03
C21
2200P
C24
R12
180
R13
100
IC1
LA7051
R9
3300
C13
5P
VIDEO IN
1
C4
22P
C5
50V1
R4
1200
R5
1M
C11
8P
L1
82μ
R8
2700
D2
EICY474
AUDIO IN
3
R1
82K
C3
50V1
T1
C1
1000P
C2
560P
R2
8200
R7
1KB
C10
22P
T2
GND
2
C14
1000P
C8
100P
N.C.
5
L3
L2
R14
8200
Q1
2SC
3130
B1
4
R6
120
L4
C15
100P
C16
2P
C18
15P
C19
3P
C20
VC
C6
1000P
D1
MA1075
C7
10n
R15
8200
R16
390
C17
2.5P
1
2
3
4
5
6
7
8
9

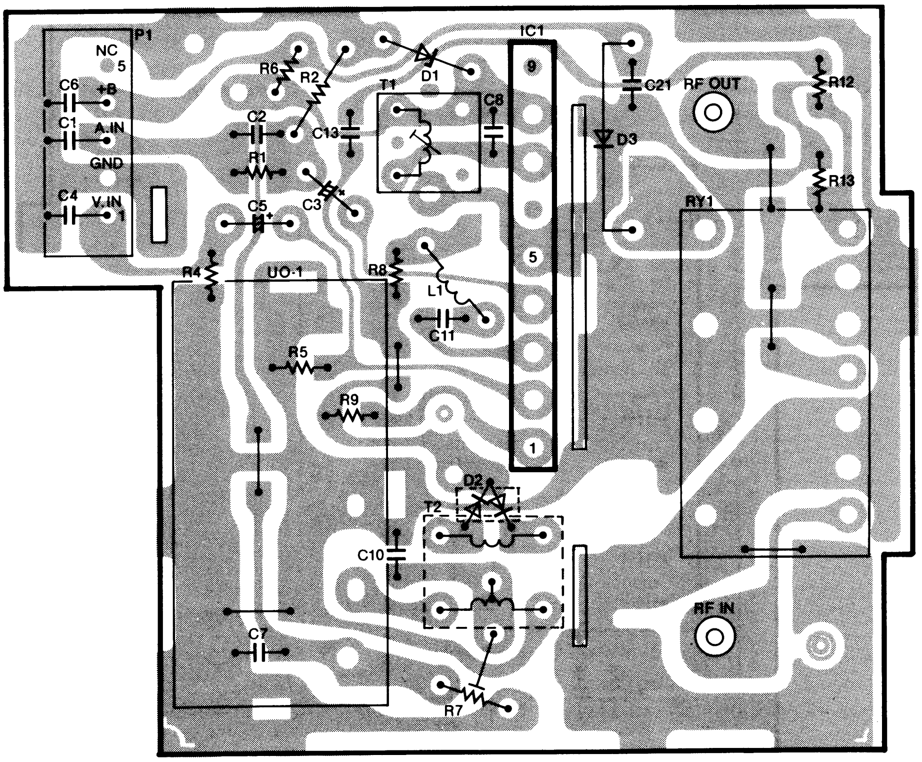
8. RF CONVERTER C.B.A. (ENC47956: VW-AM7E/EM)


P1
NC
5
C6
+B
C1
A.IN
GND
C4
V.IN
1
R6
R2
D1
IC1
9
C21
RF OUT
R12
T1
C8
C2
C13
D3
R1
R13
C5
C3
RY1
R4
UO-1
R8
L1
C11
5
R5
R9
1
D2
T2
C10
RF IN
C7
R7

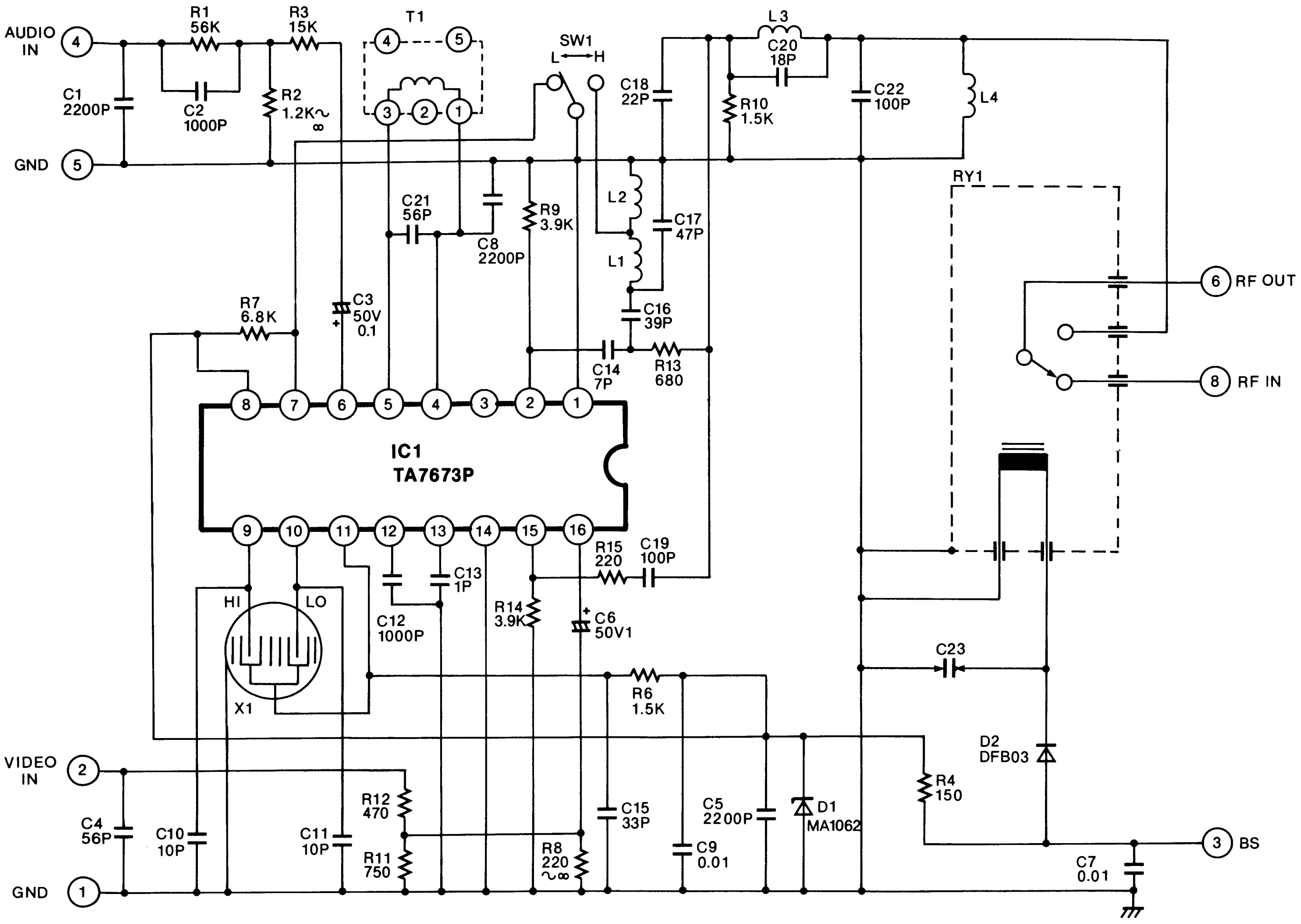
9. RF CONVERTER SCHEMATIC DIAGRAM (VW-AM7B/BA)


RF IN
RF OUT
RY1
D3
DFB03
C21
2200P
C24
R12
100
R13
100
IC1
LA7051
R9
3900
C13
5P
VIDEO
IN
1
C4
22P
C5
50V1
R4
1200
R5
1M
R8
2700
C11
9P
L1
82μ
D2
EICY474
AUDIO
IN
3
R1
82K
C3
50V1
C1
1000P
C2
560P
R2
8200
T1
R7
1KB
C10
22P
T2
GND
2
C14
1000P
C8
100P
N.C.
5
L3
R14
8200
Q1
2SC
3130
L2
B1
4
R6
120
C15
100P
L4
C6
1000P
D1
MA1075
C7
10n
C16
2P
C18
15P
C19
3P
C20
VC
R15
8200
R16
390
C17
2.5P

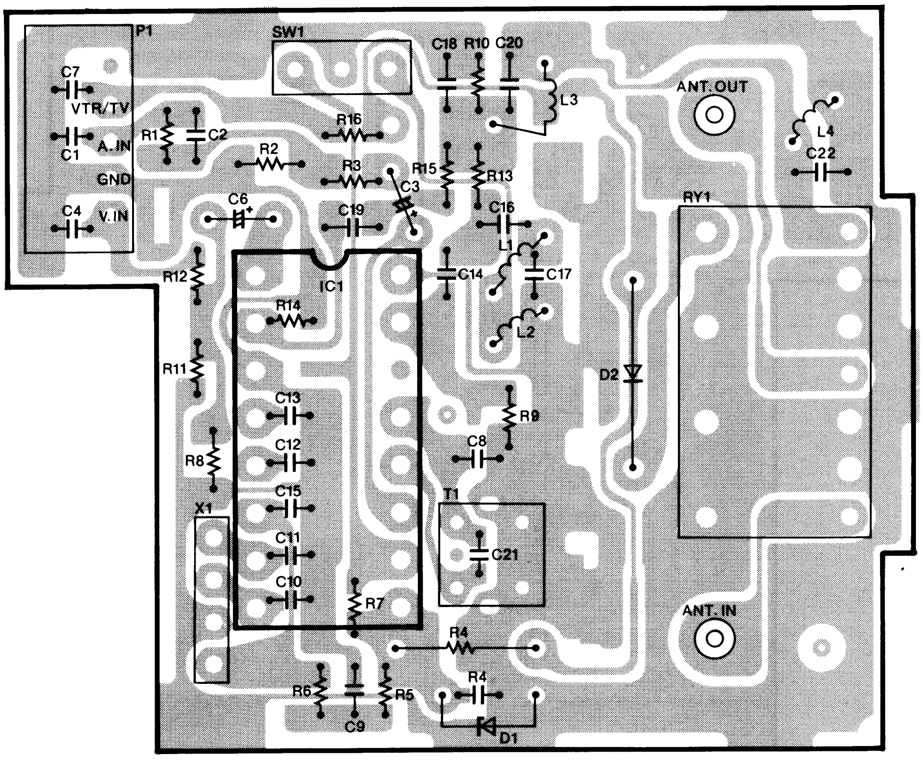
10. RF CONVERTER C.B.A. (ENC47957: VW-AM7B/BA)


P1
NC
5
C6
+B
C1
A.IN
GND
C4
V.IN
1
R6
R2
D1
IC1
9
C21
RF OUT
R12
C2
T1
C8
C13
D3
R1
C3
R13
C5
RY1
R4
UO-1
R8
5
L1
C11
R5
R9
1
D2
T2
C10
C7
RF IN
R7

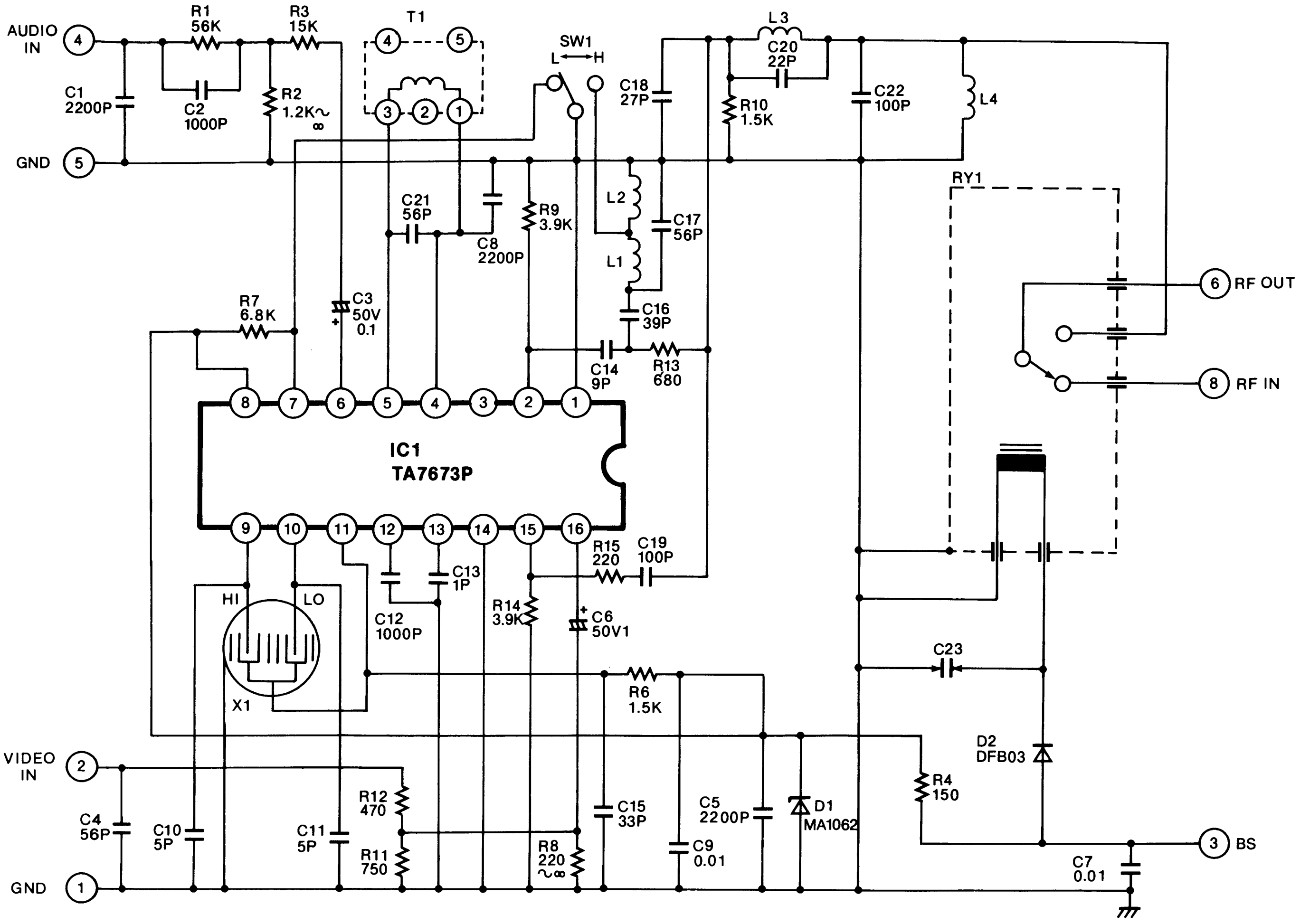
11. RF CONVERTER SCHEMATIC DIAGRAM (VW-AM7EN/EA)


AUDIO IN ④
GND ⑤
VIDEO IN ②
GND ①
R1 56K
R3 15K
C1 2200P
C2 1000P
R2 1.2K
T1
SW1 L H
L3
C20 18P
C18 22P
R10 1.5K
C22 100P
L4
RY1
C21 56P
C8 2200P
R9 3.9K
L2
C17 47P
L1
C16 39P
C14 7P
R13 680
R7 6.8K
C3 50V 0.1
IC1 TA7673P
R15 220
C19 100P
C13 1P
C12 1000P
R14 3.9K
C6 50V1
HI
LO
X1
R6 1.5K
C23
D2 DFB03
R4 150
C15 33P
C5 2200P
D1 MA1062
C9 0.01
R12 470
R11 750
R8 220
C4 56P
C10 10P
C11 10P
C7 0.01
⑥ RF OUT
⑧ RF IN
③ BS

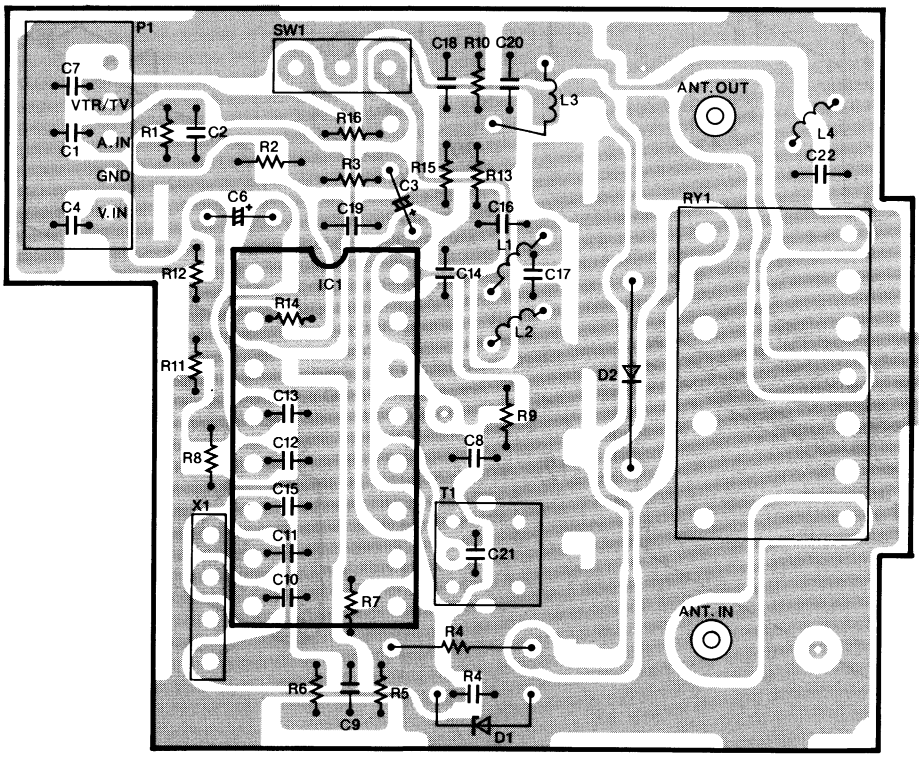
12. RF CONVERTER C.B.A. (ENC47901: VW-AW7EN/EM)


P1
C7
VTR/TV
A. IN
C1
GND
C4
V. IN
SW1
C18 R10 C20
L3
ANT. OUT
L4
C22
R1
C2
R16
R2
R3
R15
R13
C3
C6
C19
C16
L1
C17
C14
RY1
R12
IC1
R14
L2
R11
D2
R9
C13
C12
C8
R8
C15
T1
X1
C11
C21
C10
R7
ANT. IN
R4
R6
R5
C9
R4
D1

13. RF CONVERTER SCHEMATIC DIAGRAM (VW-AM7A)

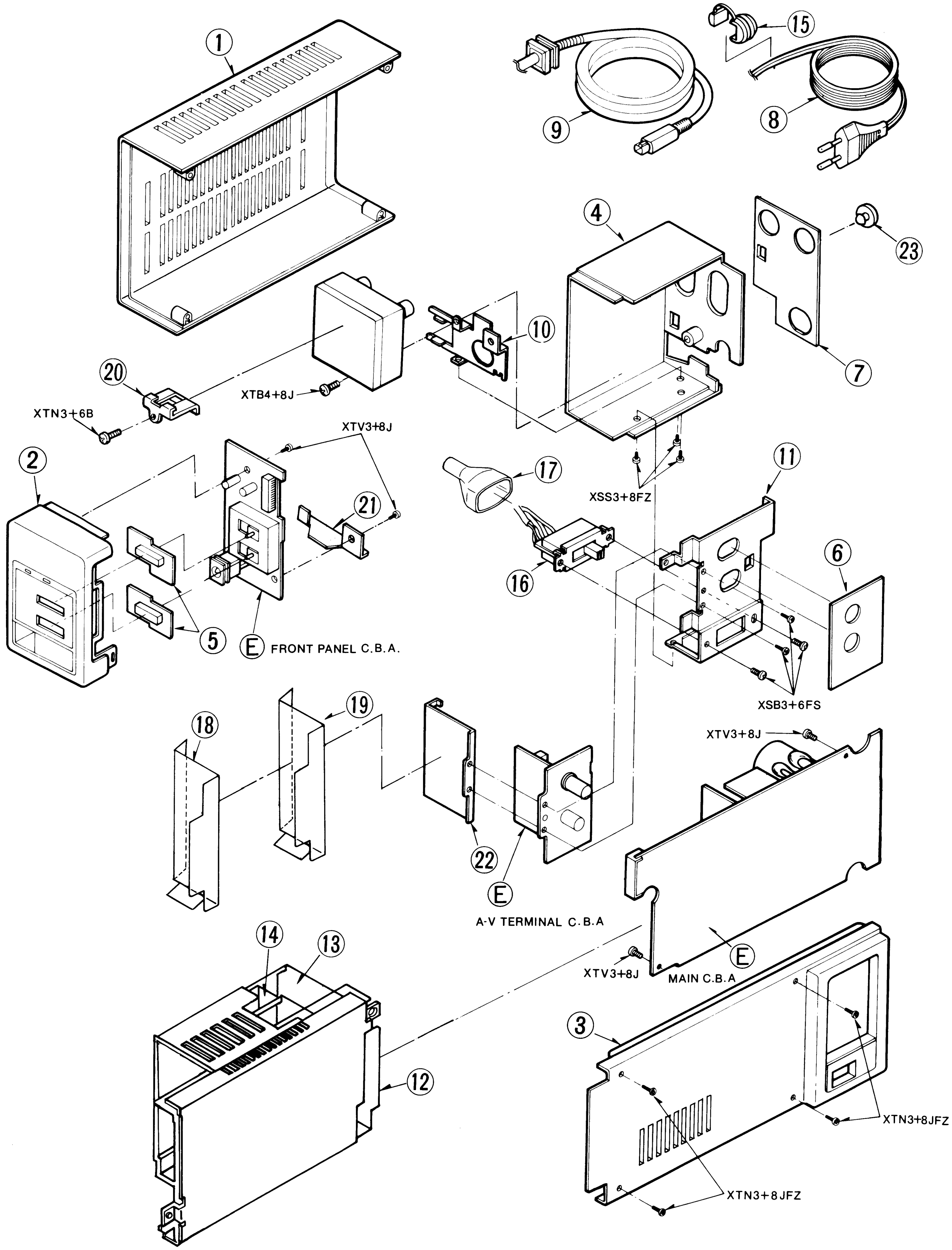

AUDIO IN ④
GND ⑤
VIDEO IN ②
GND ①
R1 56K
C2 1000P
C1 2200P
R3 15K
R2 1.2K
T1
SW1 L←→H
L3
C20 22P
C18 27P
R10 1.5K
C22 100P
L4
RY1
C21 56P
C8 2200P
R9 3.9K
L2
L1
C17 56P
C16 39P
C3 50V 0.1
R7 6.8K
C14 9P
R13 680
⑥ RF OUT
⑧ RF IN
IC1 TA7673P
R15 220
C19 100P
C13 1P
C12 1000P
R14 3.9K
C6 50V1
HI
LO
X1
C23
R6 1.5K
D2 DFB03
R12 470
R11 750
C4 56P
C10 5P
C11 5P
R8 220
C15 33P
C9 0.01
C5 2200P
D1 MA1062
R4 150
③ BS
C7 0.01

14. RF CONVERTER C.B.A. (ENC47902: VW-AM7A)


P1
C7
VTR/TV
C1
A.IN
GND
C4
V.IN
SW1
R1
C2
R16
R2
R3
C6
C19
C3
R15
R13
C18 R10 C20
L3
C16
L1
C14
C17
L2
ANT.OUT
L4
C22
RY1
R12
IC1
R14
R11
C13
C12
R8
C15
C11
C10
X1
R7
R9
C8
D2
T1
C21
R4
R6
C9
R5
R4
D1
ANT. IN

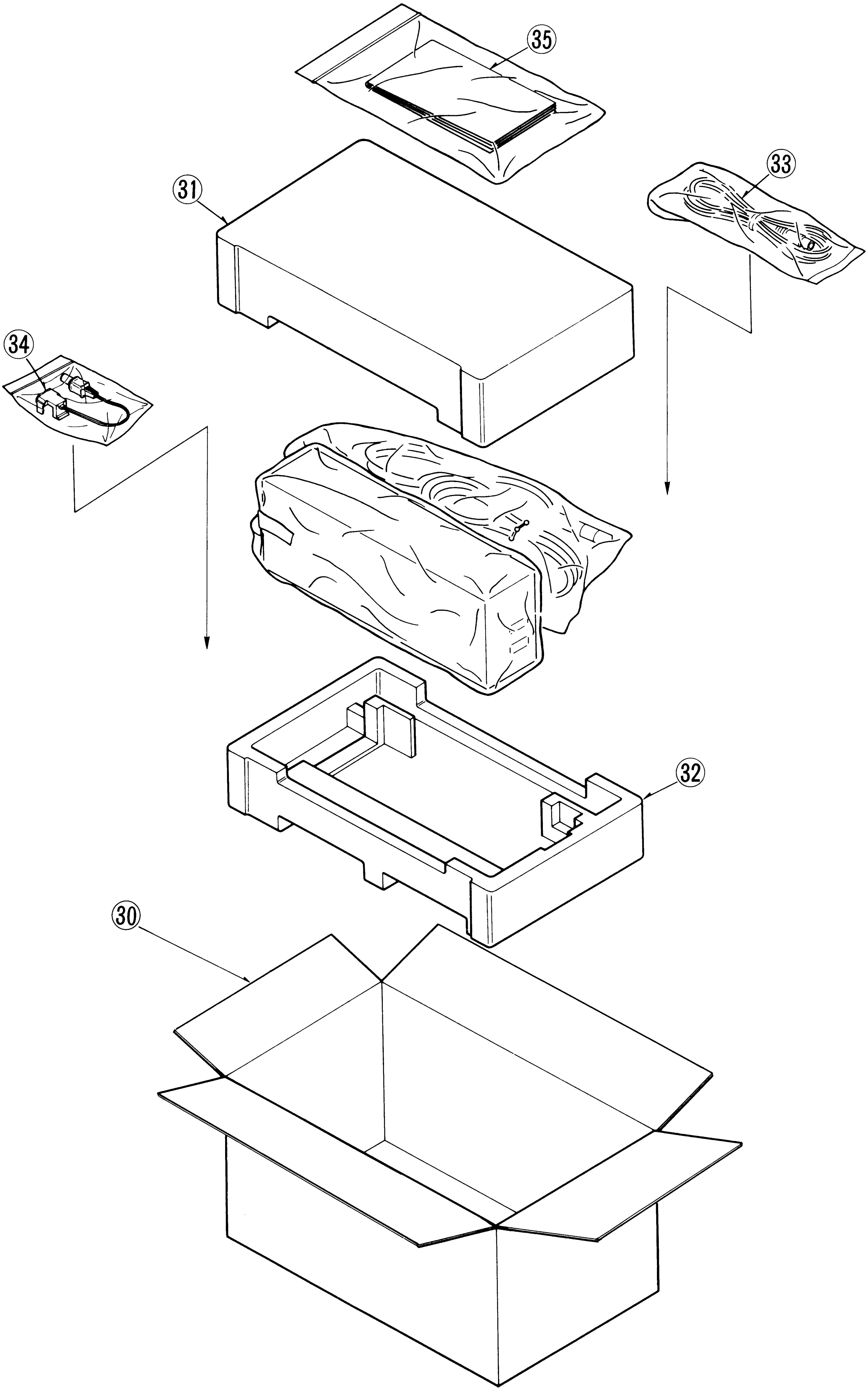
15. EXPLODED VIEWS

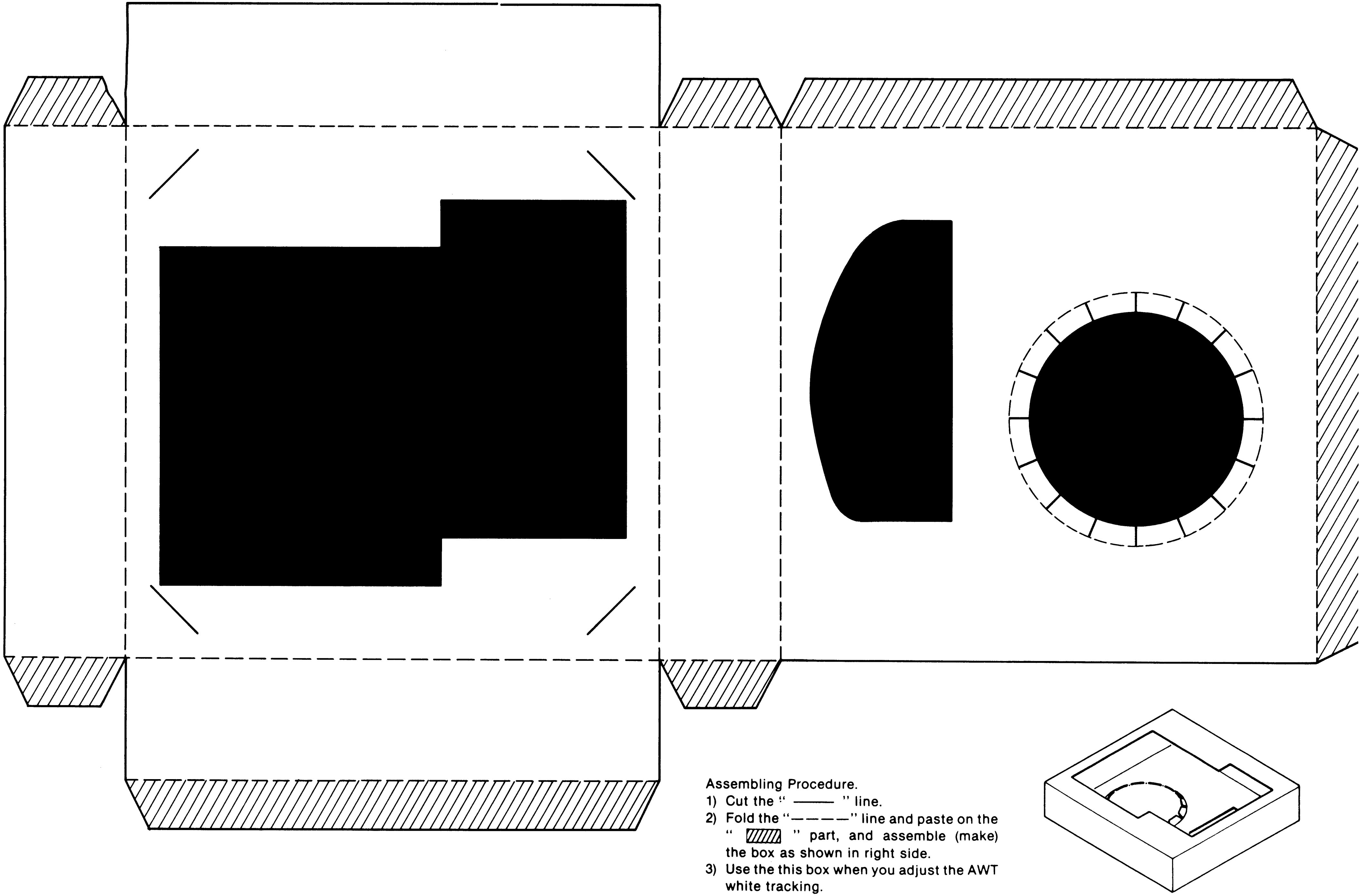
❶ CHASSIS & FRAME SECTION



①
⑮
⑨
⑧
④
㉓
⑩
⑦
⑳
XTB4+8J
XTN3+6B
XTV3+8J
⑰
XSS3+8FZ
⑪
②
㉑
⑥
⑯
⑤
Ⓔ FRONT PANEL C.B.A.
XSB3+6FS
⑲
XTV3+8J
⑱
㉒
Ⓔ
A-V TERMINAL C.B.A
⑭
⑬
XTV3+8J
Ⓔ
MAIN C.B.A
③
⑫
XTN3+8JFZ
XTN3+8JFZ

❷ PACKING PARTS SECTION (VW-AM7A/BA)





Assembling Procedure.

1) Cut the " ——— " line.
2) Fold the "– – – –" line and paste on the " ▨ " part, and assemble (make) the box as shown in right side.
3) Use the this box when you adjust the AWT white tracking.